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THE ATLANTIC MEDICAL JOURNAL

OCTOBER, 1923—SEPTEMBER, 1924

REPRESENTING

THE TRANSACTIONS OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

AT ITS ANNUAL SESSION HELD AT

PITTSBURGH, PA., OCTOBER, 1923

AND

THE TRANSACTIONS OF THE MEDICAL SOCIETY OF DELAWARE

AT ITS ANNUAL SESSION HELD AT

MIDDLETOWN, DELAWARE, OCTOBER, 1923

VOLUME LIII

(Volume XXVII of the Journal)

Edited for the Society under the supervision of the
Publication Committee

BY

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230 State Street, Harrisburg, Pa.

COLLEGE OF PHYSICIANS OF PHILADELPHIA

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PRESIDENT'S ADDRESS

MEDICAL CARE OF THE RURAL POPULATION*

HOWARD C. FRONTZ, M.D.
HUNTINGDON, PA.

In assuming the duties and responsibilities of president of this society, I am not unmindful of the great honor you have conferred upon me. I feel the responsibility, and would ask your coöperation in making this one of the best years in the Society's history.

During a service of several years on the Board of Trustees, I have been impressed with the wonderful work that is being done by this organization. May I call your attention to some of the things that are being done in the interests of the members and for the people whom we serve?

1st. The Society offers to its members a protection and help against alleged malpractice suits. This effort, has, in a way, almost become preventive.

2nd. The Society is benevolent to those of our number, who by age, misfortune or otherwise, have lessened their earning power and have not a competence for livelihood and comfort.

3rd. It has interested itself more and more in legislative affairs, through the Public Health Legislative Committee acting as a part of the Medical Legislative Conference, and the coöperation of many of the members. The efforts this year were strenuous, but we believe progress was made. We are now better able to impress the legislators with the necessity of giving to the people proper health laws, in order to protect them from the irregular, the charlatan and the quack.

4th. Our annual meetings are growing both in interest and scientific value.

5th. An effort is being made through the Public Relations Committee, in coöperation with the State Health Department, to educate the people in preventive medicine. A new item was added when, last July, a campaign was started, urging all persons to have an annual physical examination made by their family physician.

6th. The members are informed in medical affairs through the Society's monthly journal now published under the name of the ATLANTIC MEDICAL JOURNAL.

With these interests being well cared for, it seems to me that one of the great problems which confronts us and in fact is of vital importance, is the proper medical care of the rural population.

When the Lancaster County and Chester County Medical Societies, early in 1848, called a few other medical organizations together at Lancaster, Pa., to form the Medical Society of the State of Pennsylvania, we find that 61 physicians responded to the call and brought into existence an organization which has stood the test and has become a large factor in the affairs of this state. This body of men was composed of a number who were educated in medical schools with a two-year course, while quite a number were educated by physicians who acted as preceptors, and then they added to their knowledge from the school of experience. The majority of these physicians practiced in the rural districts. These pioneers of seventy-five years ago were intensely in earnest in their professional work and were worthy examples of the true physician, as is evidenced by the address of the first President of the Society, Dr. Samuel Humes, of Lancaster, at the 2nd annual meeting held in Reading, April 11, 1849, when he alluded to the efficient action of Congress on the bill relative to the importation of adulterated drugs, and said: "When those only shall be selected for our profession whose preparatory education accords with the sensible views entertained by the Committee of The National Association on that subject, when our schools persevere in the course promised for theoretical and clinical instruction, when our graduates in medicine select locations for practice without reference to their comfort and ease, but where their recently acquired knowledge can be brought into immediate requisition, when liberal and conscientious views are entertained in relation to medical consultation in extreme cases,

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*Delivered before the General Meeting of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 2, 1923.

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where the lives of valuable citizens are in jeopardy and they are not deferred until the moribund condition, when those only are members of the profession whose thirst for wealth is merged in the more noble desire of becoming successful practitioners in medicine, when the infinitesimal humbugs of the day are superseded by the sober second thought of an enlightened community, and finally, when our profession is distinguished for the liberal, benevolent and gentlemanly bearing of its members toward one another, then will the period have arrived, as predicted by the immortal Rush, 'when casualties and old age shall be the only outlets of human life.'" This quotation embodies principles which appear to be good doctrine for us to-day.

One of the purposes of the Society at that time was to act as a powerful aid in the formation of the county medical societies. The policy to-day is to make the component county societies more active and of greater scientific value.

There were no legal requirements to practice medicine until 1881. At that time, the three-year course went into effect in all medical colleges in the state. The four-year course became legal June 1, 1895. The standards were further raised in 1913, when all medical students were required to have one premedical year, and one year as an interne in an accredited hospital, in connection with the four-year course, before being permitted to take the State Board Examinations.

This Society, which has sponsored the advance and present standards of medical education, has kept pace with the progress of the great State of Pennsylvania, and is now advocating a preliminary training and an educational requirement over the same period of years for all the cults which desire to practice the healing art, so that they may be safe in relieving human suffering and distress.

With the high standards for medical students, the time, the energy and financial consideration required to obtain a medical degree, there is a growing tendency for the young physician to take up a specialty. This condition naturally causes them to seek the cities and larger towns as a suitable place to practice. The result is that the rural districts are being depleted of physicians and we are drifting into specialism in medicine. This is a deplorable situation and needs serious consideration. I am not decrying the specialist. These men have made possible many cures, by devoting their time and energy along a special line, and they should be encouraged in their excellent work, but all need not be specialists. There is still great need for the general practitioner, especially for the country work.

I do not believe the standards for the practice of medicine are too high for the responsible work of dealing with human life. None of us feel that we have too much knowledge to carry on our life work.

I also do not believe that the people in the country should have any lower standards of medical service than the city patients. The rural population is made up of many different types of people. Among these are the well-to-do farmer, the laborer, the farmer who rents, the woodsman, the merchant in the small village, the minister, the housewife and the small children, the city folk who seek the country at intervals, the summer cottagers, the summer campers, many persons at mountain resorts and the factory worker who travels to the larger place for work by jitney. Quite a number of these are engaged in essential occupations, and it is fair to them that their medical needs receive care, and that highly educated medical men should render this service.

The country physician must of necessity be a person with good physical health and must have endurance. He should have a good general knowledge of medicine and some knowledge of emergency surgery and other special lines. He must decide about cases alone. He has no associates to help out in the diagnosis and treatment, as is the good fortune of our city doctor. He may be badly needed at the extreme points of his field at the same time. He does more than an 8 or 12 hour daily duty most of the time. When away on vacation or business, the people are without a doctor, for usually the country doctor has no competition. He is very much a part of the community life and his advice is sought on questions other than the practice of medicine. He is at times obstetrician, anesthetist and nurse at a maternity case. He may have to be an emergency dentist and pull an aching tooth. He is the first called for the obscure and unusual case in the country, and with his broad general knowledge often makes the correct diagnosis.

As an illustration of a day in country practice, I give the following: A country physician who lives in Central Pennsylvania and who practices in a large rural district told me of his day's work on August 24, 1923. He lives at O., a town of 682 population. At 5:30 A. M. he was called to a maternity case, which was progressing slowly. He then was called to the town of N., 11 miles away. On his return, he was called to go back to S. G., 7 miles. On the second return, he had to go to S., 5 miles another direction. He visited the maternity case several times during the day, and made a number of visits in town. In the afternoon he was again called to N., to care for an accident case, and on his return had to go to S., the second time. He returned in time for the birth at 7 P. M., and finished the day with some office practice. The roads traveled were not state improved.

The many different types of cases that are seen by the country physician, if he is progressive, will lay the foundation for his becoming a high standard physician or a great specialist.

Statistics show that there is in Pennsylvania, including both rural and urban population, one physician to 768 persons.

The proportion in the large cities is as follows:

Philadelphia	1	physician	to	526	persons
Pittsburgh	1	"	"	470	"
Reading	1	"	"	665	"
Scranton	1	"	"	662	"
Erie	1	"	"	632	"
Harrisburg	1	"	"	477	"
Wilkes Barre	1	"	"	502	"

Counties which are largely rural are proportioned as follows:

Adams Co.	1	physician	to	1343	persons
Bradford Co.	1	"	"	1063	"
Clinton Co.	1	"	"	1454	"
Cumberland Co.	1	"	"	1171	"
Huntingdon Co.	1	"	"	1106	"
Juniata Co.	1	"	"	1315	"
Mifflin Co.	1	"	"	1257	"
Monroe, Co.	1	"	"	1602	"
Snyder Co.	1	"	"	1803	"
Somerset Co.	1	"	"	1866	"
Susquehanna Co.	1	"	"	1391	"
Tioga Co.	1	"	"	1296	"
Wyoming Co.	1	"	"	1175	"
York Co.	1	"	"	1156	"

In the above named counties, we find in the communities of 5,000 and less, the ages of the physicians to be as follows:

21	physicians	from	28	years	to	35	years
37	"	"	35	"	"	40	"
37	"	"	40	"	"	45	"
31	"	"	45	"	"	50	"
48	"	"	50	"	"	55	"
31	"	"	55	"	"	60	"
27	"	"	60	"	"	65	"
23	"	"	65	"	"	70	"
18	"	"	70	"	"	75	"
12	"	"	75	"	"	86	"

Of the total of 285, there are 95 under 45 years of age.

York County, with an area of 903 square miles and a population of 144,521 has 124 physicians. In that county, the city of York has a population of 47,512 and 87 physicians, leaving the rural district of about 100,000 population with 37 physicians. Susquehanna County, 35 years ago had 65 physicians. At present there are 25. During this period of time, the population has decreased only 12%.

From a survey of the counties of this state relative to conditions of rural practice, I have selected 20 counties which have a large rural population, and reports indicate that there are locations for about 50 physicians. The incomes will range from $2,500 to $8,000 per year.

A number of suggestions have been made as a remedy to improve the conditions. The majority mention good roads. One physician believes college professors should talk to the students about country practice. Another says, "Send young men willing and able to work. Reduce time of medical education, if necessary." Another speaks about contract practice or an income of a certain amount guaranteed by the community. Another physician states as follows: "All country work, almost no office practice, must be equipped with automobile and horses." He keeps 4 horses and 2 automobiles. A fifty-mile trip is not uncommon. Conditions of travel are bad, roads in summer are rough and stony, and in winter often blocked with snow. He says there is no solution, that no young man can afford to locate in any of these 10 or 12 hamlets or villages except possibly 2, because of the extremely hard work and long hours necessary to earn a reasonable income. Three hundred and sixty-five days of 16 to 18 hours length will be his yearly job; fees, a fair average; collections, 95% or more.

The Solution: There should be a more helpful coöperation among the doctors in the larger towns and cities in caring for the rural patients. In some sections of the state, help is readily given. In other places there is too much independence on the part of the town physicians, and some absolutely refuse to go to the country. The result is that there are times when a very ill patient is without medical care. This neglect brings discredit on the whole profession. It has been said that there are a sufficient number of physicians. We believe this is true, but they are not properly distributed.

Each new graduate should be willing to do general practice for a period of at least five years. He would get a good general idea of the ills which affect the whole body, and make a better, broader and more competent specialist, if he cared to become one. This five-year period would help solve the problem. The medical schools could help by advising the young graduate of this need.

Better roads other than the main highways should be built, so that it would be possible for the doctor to reach the patient more quickly and with less physical effort. Good highways, the automobile and the telephone are three great helps in solving this problem. The telephone often saves the doctor a long, hard trip.

There should be a coöperation of organizations interested in rural affairs, such as the Grange, agricultural associations, farm bureaus, the component county medical societies, and the citizens in small communities. A guarantee of a minimum compensation by a given community might help. I know of several instances where this has been done and the doctor's income far exceeded the minimum.

The opening of hospitals in the rural counties has been a great advantage. There are in most of the counties one or more good hospitals, where those in charge are willing and able to treat patients who cannot be properly cared for at home. This service is increasing, and these hospitals are located near enough to make it possible for any patient needing hospital care to be removed from his home to one of these institutions. All such hospitals should aim to have such efficiency in their staff and their service that it would not be necessary for patients to go long distances and pass a number of hospitals on the way to reach a particular one in order to secure this service. I desire to commend at this time the splendid campaign for standardization of hospitals by the American College of Surgeons. It has made better hospitals and more efficient staff members.

A big factor in helping the rural population is the continuance of the great work of preventive medicine. The Pennsylvania Department of Health is the proper organization to direct the work of preventing disease in this state. Much has already been accomplished through this agency. The new Committee on Public Relations is also giving fine coöperation in this work.

These preventive measures are eliminating or lessening the incidence of certain diseases which have always been prevalent. Among these are:

Typhoid fever: This disease is becoming rather rare, due to better supervision of the milk supply, the proper control of water for domestic purposes and immunizing with typhoid vaccine. The people are becoming better educated to the necessity of having clean milk from tuberculin-tested cows and having a pure water supply.

Diphtheria is being eliminated. It received a severe blow from antitoxin, and now another from the Schick test and toxin-antitoxin. The campaign to immunize with toxin-antitoxin is well under way.

Vaccination against small pox is still compulsory for school attendance, due to the failure of the bill before the last Legislature which was to help out the "conscientious objector."

Tuberculosis: This campaign has so far progressed that the terrible effects of the disease are well known to the people. As physicians, we should make an early diagnosis of a given case and promptly begin active treatment and then protect the children from contact. Much good work to prevent and control this disease has been done by the State Department of Health.

Tetanus can be prevented by the prompt administration of immunizing doses of tetanus antitoxin, to those receiving injuries. This remedy is easily procured and should be used when there is the slightest doubt.

The school nurse, the dental hygienist and the school teacher are factors for health in every well regulated school. We know that most of the communicable diseases in communities occur during the school term, and that the early symptoms of such diseases, as measles, whooping cough and scarlet fever are often found in the children when in school, and they then infect the other susceptible children by contact. The school nurse in the larger school and the school teacher in the township or one-room school can often prevent an epidemic of a communicable disease by observing that the children are sick, and sending them home to remain until a physician pronounces them well. We need better control of the above named diseases, and this would be a factor in helping to prevent them. The dental hygienist is doing much in the early care of the child's teeth. When the teeth are cared for and cleaned, it is an incentive to improve other unhygienic conditions, and the child is thus made less susceptible to disease.

With all these valuable helps in preventing disease, there will be sickness to treat, and the country practitioner will still be a necessity and have plenty to do.

The postgraduate work, which is now under way in this state appears to be a success, but it is a question whether it will reach the physician in the country, who probably has less time for study than our more favored brethren in the larger towns and cities. Some plan should be worked out for them to secure this benefit. As a suggestion, might it not be well to take care of the rural physician as is done in Vienna, where the faculty arranges for one week, three times a year for an intensive postgraduate course for rural practitioners only, and sends internes of hospitals to their districts to look after the work where it is necessary.

In conclusion, I would recommend that a bureau be established, either by this Society or the State Department of Health, to receive and give information relative to localities needing a physician, and also that physicians desiring a location be invited to file an application with that bureau; this to be given sufficient publicity and attention to insure efficient service.

I feel strongly that this Society should take some positive action looking to the solution of this problem. I believe the time will come when others will make such a start if we do not; but it would seem to me that this organization should take the forward step.

SELECTIONS

PERSONAL EXPERIENCE WITH THE USE OF ILETIN (INSULIN) IN THE TREATMENT OF DIABETES MELLITUS*

JOHN A. LICHTY, M.Ph., M.D.
PITTSBURGH, PA.

Introduction

In May, 1921, a group of men organized and directed by Prof. J. J. R. Macleod, Department of Physiology of the University of Toronto, undertook to separate from the pancreas the internal secretion of the islands of Langerhans. This undertaking was instigated by the conclusions arrived at by F. G. Banting, then an assistant in physiology at the Western University, London, Ontario. Banting, from certain suggestions which he picked up in the medical literature pertaining to diabetes and its particular relation to the pancreas, conceived the idea of separating the external portion of the gland from the internal portion, and thus obtaining the internal secretion and making it available for the treatment of diabetes mellitus.

The use of this internal secretion of the islands of Langerhans (*Insulin*) in the treatment of diabetes mellitus has been under observation by the clinician now for about one year, though its general use, under certain restrictions, has been established only for about the past four months.

Scope of Discussion

It might seem premature, therefore, to report any definite results from this plan of treatment. But my object is not to attempt a statistical presentation; it is rather to speak of my personal experience with a comparatively small group of patients in whose cases the product Insulin was administered. No doubt the stamp of approval, or disapproval for that matter, and the extent to which this treatment will be applicable will come from, and will be determined by the many similar reports of cases which will be offered from time to time in the next few years. *Animal* experimentation must be confined to the laboratory from which the reports concerning this substance have come and are still coming, but *clinical* experimentation and observation must be reported from the places where these patients live or may be induced to congregate. Some of these reports may be of great, and others no doubt of very little value, depending upon the comprehension of the problem and the reliability of the observations made by the individual reporting them.

Great credit must be given to the Toronto group of investigators for keeping this work from newspaper publicity, and for keeping the administration of the remedy for a time in the hands of the few whose qualifications were known personally and upon whom they could rely for that gradual introduction to a larger field which any new remedy deserves. This protecting guidance in itself furnishes an interesting chapter in the history of this discovery.

The impatience which has been manifested by the laity, and by the profession as well, from time to time, with reference to the difficulty of obtaining Insulin cannot be wondered at when one recalls the large number of people who are suffering from diabetes and who are without hope of recovery, and also when one recalls the difficulties and disappointments with which the physician has had to contend heretofore when he undertook the treatment of these patients.

Former Methods of Treatment

In my own experience I have seen in the past thirty years approximately 500 patients with diabetes mellitus. A few of these may have been only cases of simple glycosuria. A review of the lines of treatment adopted from time to time in these patients brings out clearly the fact that thirty years ago we were about at the end of the so-called "medical treatment" period. It was a failure, as no specific remedy could be found in the pharmacopea. I have in my possession some very interesting diagramatic charts which were supposed to show the effect of the "codein treatment" in a severe case of diabetes in a patient in the medical wards of the Philadelphia Hospital in the winter of 1894-95. It was remarkable the amount of codein this patient could take with safety when the dose was increased gradually. The urine diminished in volume, and the sugar in amount, but the caloric value of the diet could not be increased, in fact had to be diminished, and the patient died in coma.

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*Read before the American Climatological and Clinical Association at its Annual Meeting, May 23-25, 1923, at Niagara Falls, Canada.

Note—I wish to express my appreciation personally to the Toronto group for making it possible for me to obtain Insulin for my earlier cases, and also to thank Eli Lilly & Company for their willingness to supply me with Iletin, gratuitously for a time, for subsequent cases, as well as for their promptness and helpful suggestions.

The period following that of specific medication might be called the period of "high caloric feeding." Carbohydrates were practically eliminated from the diet forthwith, when it was possible, but high fat and high proteid feeding was substituted. Von Norden and others advocated specific carbohydrates, such as oatmeal, potato, rice, etc. This treatment was based upon the physiology then known, but the failures and the cases of the diabetic coma were if anything more frequent.

Next came the period which promised more for these hopeless individuals than any previous plan of treatment. This began about 1912 and was the result of the epoch-making work of Dr. Frederick M. Allen. He produced the disease, diabetes mellitus, in dogs and then placed those same dogs upon a diet characterized by a low caloric value and controlled the glycosuria with remarkable ease.

From this time on the patient with diabetes mellitus became more hopeful. The number of deaths from coma diminished, and the complications were not so frequent and not so dangerous. Too much credit cannot be given to Allen for his careful work. The practical clinical application of this is typified in the common-sense way in which Dr. Elliott P. Joslin applied it in his own work, which has since become the guide of many physicians and dietitians and patients.

We now enter into the fourth period, that of a specific remedy representing the internal secretion of the islands of Langerhans. This seems most rational, and has been looked for, for a long time, or ever since it was shown that the active principle could be separated from any gland of internal secretion. No doubt it is largely due to the recent development of physiological chemistry that this discovery was made possible at this time. Acknowledgment has already been made to J. B. Collip of the Department of Pathological Chemistry of the University of Toronto for his share of the work in relation to the problem of isolating the active principle "Iletin" and of freeing it from the objectionable proteids.

In conformity with this brief review my 490 cases naturally divide themselves into four groups as follows:

(1) Those few in which it was attempted to use a specific drug. The results were necessarily disastrous.

(2) Those (186) in which it was attempted to eliminate the carbohydrates, excepting certain specified forms, from the diet and increase proportionately the proteids and fats. The results were somewhat encouraging.

(3) Those (242) in which the Allen and Joslin plan of resting the pancreas, by a certain reduction of the diet and then later gradually increasing the diet, was adopted. This gave such satisfactory results that one felt justified in holding out new hopes to the diabetic. Some of these cases were of patients who have become sugar free, are now living a normal life, and are apparently well. These favorable results were usually in patients at or beyond middle life.

(4) And finally (27) those in which *Insulin* is now employed, the results of which I shall briefly narrate. These 27 patients were selected from 44 patients with various forms of glycosuria which presented themselves for treatment since about November 1, 1922.

Report of Cases

My experience with Insulin began in a rather indirect way early in August, 1922. I had at that time under my care a patient whom I saw first in April, 1920, and whose history is briefly as follows:

Case 1.—Miss J. T., No. 21,764, aged 5 years, had been in good health, excepting that she was subject to occasional attacks of pain in the abdomen with nausea and vomiting. No cause could be given for these attacks. Two years ago she had three or four attacks of tonsillitis in rather rapid succession, after which the attacks of abdominal pain no longer recurred. Three weeks before consulting me she became unusually thirsty and had polyuria. Six days ago sugar was found in the urine. Her weight was 42 pounds. There were no abnormal physical findings, except that she had diseased tonsils. On a general diet her blood sugar was 0.14 and the amount of sugar in the urine was 12 per cent in 1,050 c.c., or 126 grams in 24 hours.

She was sent to the Mercy Hospital and placed upon the Allen-Joslin treatment with certain modifications. A radiologist treated the tonsils. The child coöperated very well and in a reasonable time she was sugar free on about 700 calories. After leaving the hospital sugar occasionally returned in the urine, but with a slight modification of the diet it could be eliminated.

In October, 1921, she was accidentally exposed to diphtheria, and two weeks later had a sore throat which fortunately, however, was not diphtheritic. After this she had an attack of rheumatic fever from which she made a recovery without any heart involvement. But from that time on it was difficult to keep her urine sugar free. Her diet was reduced from time to time, and in August, 1922, she was very ill. She weighed less than 38 pounds; her blood sugar was 0.28; daily urine 3,720 c.c. with 1.2 per cent sugar (44.64 grams) on practically no food intake. She had a general edema and was listless. It was thought she could not live. We then called the attention of the Toronto Clinic to her case through the kind offices of Dr. R. H. Henderson of Kitchener, Canada, a close friend of the family, and on August 19, 1922, she was taken to Toronto. She was carried to the clinic, as she was unable to walk. I am unable to give the details of the treatment there, but Insulin was given and under gas anesthesia, at an opportune time, an enucleation of the tonsils was done. She returned to Pittsburgh October 19th, after just two months of treatment, weighing 6 pounds more than when she left her home and taking 30 grams of carbohydrates, 30 grams of proteids, and 90 grams of fats. Her cheeks were rosy and her body was plump. She was taking about 15 units of Insulin hypodermatically before each meal. There was occasionally sugar in the urine.

Case I, Before Treatment.

Case I, After Treatment

October 31st I was advised from Toronto that Eli Lilly & Company would supply me with Insulin for this patient under the trade name of "Iletin," which I have since used. With the use of the first shipment there was a slight protein reaction, but since then the preparation has been satisfactory throughout. The patient is going to school half days now and seems and acts like a well child. At present she weighs 55 pounds and is growing in stature. Her diet contains approximately 35 grams of carbohydrates, 32 grams of proteids, and 140 grams of fats. To metabolize this she has administered hypodermatically 14 units of Iletin before breakfast, 8 before lunch, and 14 before dinner. This patient's life was undoubtedly saved by the use of Insulin. I am attempting to diminish the Iletin now, and her improvement is continuing.

In another case which began the treatment in December, 1922, I succeeded in gradually withdrawing the Iletin until the patient got along without any. This remarkable case deserves to be reported because it opens up the large question of the permanency of the effect, or in other words the possibility of a cure of the disease.

Case 2.—Mr. J. W. K., No. 23,284, aged 16, a school boy, consulted me December 12, 1922. His symptoms began about October 27, 1922, without any apparent cause. His father's uncle and a cousin on the father's side had diabetes. The physical signs were negative. His weight was 96. The urine contained 6 per cent sugar and the blood sugar was 0.19. By gradually withdrawing the fats and then the proteids, and later reducing the carbohydrates the urine became sugar free in seven days and the blood sugar came to 0.08. The diet contained about 363 calories then. It was increased rather rapidly and Iletin was given before each meal. It will be seen by the chart that this patient's urine remained sugar free from the first. Later, because the blood sugar remained low even though the food was increased, the Iletin was diminished. January 17, 1923, on account of our supply of Iletin being for the time exhausted, it was withdrawn entirely. No sugar appeared in the urine and the blood sugar was 0.1. This patient has been seen at intervals since. His blood sugar has never been higher than 0.14, and the urine has remained sugar free. His diet at present is 120 grams of carbohydrates, 100 grams of proteids, and 200 grams of fats. He now weighs 116 pounds, a gain of 20 pounds, and has grown ¾ of an inch. He has returned to school. This patient is naturally being watched with great interest. On April 24th the urine was 1020, normal, 1250 c.c.; the blood sugar 0.10 on a diet of 120 grams of carbohydrates, 100 grams of proteids, and 200 grams of fats. I understand similar cases have occurred in some of the other clinics, but as yet I have seen no published report.

This is the first patient I have treated with Insulin who had not had a previous trial with dietetic treatment only. The contrast of the two treatments cannot be so definitely shown, therefore. The next case I shall report shows the contrast very definitely, an adult patient who

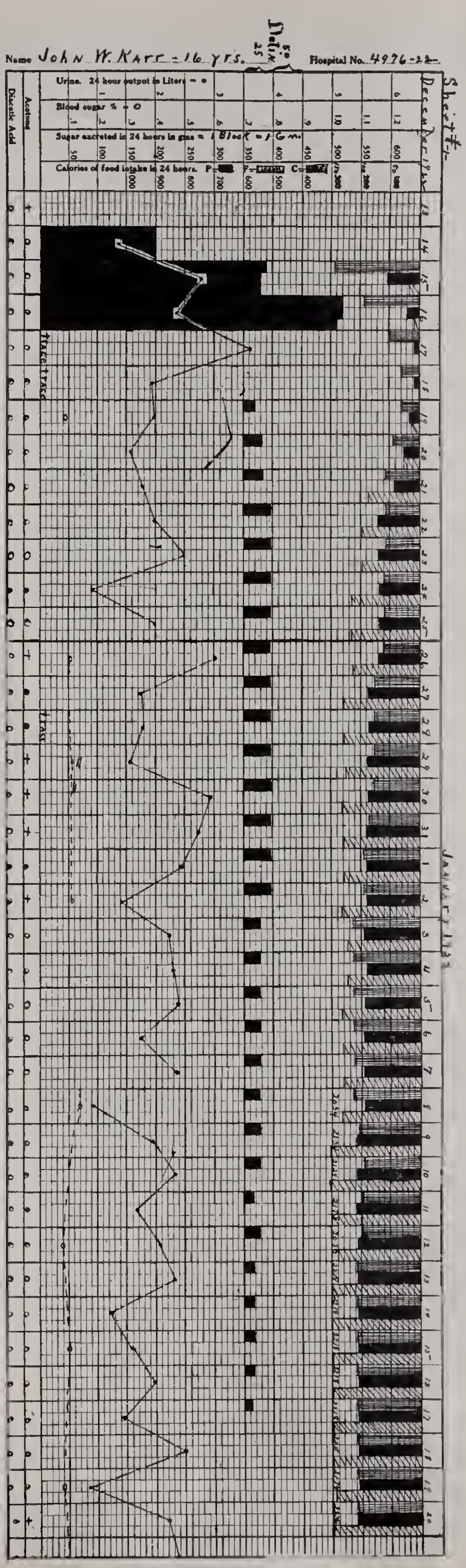

Chart of Case II.

has been under my care since June, 1920. Since that time she has been in the Columbia Hospital two different periods. During the first period she did very well. For almost two years thereafter she increased her diet and improved, but on account of a sudden bereavement her tolerance broke down and she returned to the hospital in May, 1922. The results at this time were not so good. She was later sent to the diabetic clinic of Dr. S. T. Nicholson of Clifton Springs Sanitarium, where she improved for a time, but later her tolerance diminished so that she apparently could not metabolize more than about 8 grams of carbohydrates. October 9, 1922, she was taken to the diabetic clinic of Dr. John R. Williams at the Hiland Hospital, Rochester, N. Y., where Insulin treatment was undertaken. It is only fair to Dr. Nicholson to state that he had just received his first consignment of "Iletin" from Eli Lilly & Company as this patient was leaving for Dr. Williams' clinic. The history is as follows:

Case 3.—Mrs. J. W. F., No. 20,463, aet. 42, consulted me first in June, 1920. Sugar had been found in the urine four weeks previously. The patient had not been well since an attack of influenza during the winter of 1918-19. Five weeks before, she first noticed excessive thirst and polyuria.

The physical examination showed a loss of weight from 128 to 111 pounds. There is an adenomatous thyroid, but no definite thyroid symptoms could be elicited. There is also a general visceroptosis.

The urine contained a heavy trace of sugar and the blood sugar was 0.23. She was sent to the Columbia Hospital and her subsequent history was as described above. Several factors entered into this case which needed consideration. The patient began to develop occasional manifestations of thyrotoxicosis and she was also passing through the menopause. Occasionally there was great mental depression.

Dr. Williams reported to me that the patient's weight was 69 at first while at the Hiland Hospital. With the use of Iletin and on a proper diet the weight came up to 99. When she left the hospital she was taking 52 grams of carbohydrates, 27 of proteids, and 180 of fats. The urine occasionally showed sugar. At present this patient weighs 114 pounds. She now takes 54 grams of carbohydrates, 84 of proteids, and 181 grams of fats, and needs 35 units of Iletin to keep the urine sugar free.

Case 4.—Mrs. S. S., No. 9,882, aet. 52, consulted me in 1910 on account of obesity and pain in the knees. The patient was much above the normal weight. The knees presented no physical signs suggestive of pathology. The urine was normal. It was concluded that the pain in the knees was due to excessive body weight and to faulty posture. A reduction diet was established and with the decrease of weight the symptoms disappeared.

The patient then passed from my observation until July, 1918, when she appeared with an increase of weight and the return of her former symptoms. One per cent sugar was then found in the urine. With a limitation of the carbohydrates of her diet the sugar could be easily eliminated from the urine, and for the following four years the patient was in comparatively good health. There was considerable arterial change for a 60 year old individual. The blood pressure was 150-100.

In the fall of 1922 the patient entered the Mercy Hospital because of the gradually diminishing carbohydrate tolerance. The urine was 1020, acid, 2750 c.c., and 2% sugar. The blood sugar was 0.28. Under the usual Allen-Joslin regime the patient's urine became sugar free and the blood sugar came down to 0.08. The intake was only about 1200 to 1400 calories. About this time Iletin was available and in December this treatment was begun. In this case it was possible to advance the diet to 1800-2000 calories by administering 15 units once a day. The intake was approximately 130 grams of carbohydrates, 70 grams of proteids, and 140 grams of fats. It was attempted several times to increase the fats and also to decrease the Iletin, but each time the blood sugar went up and sugar appeared in the urine. The patient feels better, looks better, and has the satisfaction of eating a more varied diet. Her carbohydrates are no doubt higher than they should be, but she prefers her diet as it is even though it requires more Iletin.

Case 5.—Mrs. I. B., No. 23,857, aet. 62, was referred to the Medical Department of the Mercy Hospital from the Orthopedic Department by Dr. James O. Wallace. She entered the hospital on account of a fracture at the neck of the left femur due to a fall. In the course of the examination 4% sugar was found in the urine. A cast was applied and the patient was transferred. She had a right-sided facial paralysis, due evidently to a swelling in the right parotid which she said had been noticed for five years. There was also a swelling of the knees like a villous arthritis. The patient was of the obese type, and an attempt was made to reduce the sugar in the urine by leaving off the fats first, later the proteids, and finally reducing the carbohydrates. The blood sugar was 0.25 on admission. The urine became sugar free and the blood sugar fell to 0.10. At this point a profuse diarrhea began, which suddenly dehydrated the patient. The signs of coma appeared and developed rapidly. Water was given by mouth and subcutaneously. The blood sugar increased to 0.25. In two days eighty units of Iletin were administered. The blood sugar came down after each administration, but immediately went up again. The coma became deeper and deeper and death followed at the end of four days. This case presented insuperable difficulties on account of the pain from the fracture, the discomfort from the cast, and possibly not the least from our own inexperience with such complications.

Another case of diabetic coma in which Iletin was given, died under my care at the Mercy Hospital. This patient had an old, unrecognized, suppurating mastoid which gave symptoms of cerebral pressure. Her diabetes has been of long standing. She was emaciated and showed signs of beginning coma when she entered the hospital. It was rather difficult to determine how much of her condition was due to mastoid disease and how much to diabetes mellitus.

In both of these cases the Iletin showed its value in controlling the hyperglycemia and the glycosuria, but one was soon impressed with the fact that the treatment of diabetic coma meant more than controlling the hyperglycemia and glycosuria. In both cases it was difficult and finally impossible to keep up the necessary supply of fluid for the body, though all the avenues for getting fluid in were utilized. It goes without saying that finally nutrition failed also, and the Iletin seemed to bring about only a disappearance in the blood and urine of the evidence of the marked katabolism which characterizes diabetic coma. Twenty-seven cases have now been treated with the aid of Iletin. They do not constitute the whole number of patients presenting diabetes mellitus and glycosuria seen since the Iletin treatment was begun. These five patients were reported as representing certain types of the disease. These types appear as follows:

Types of Cases

Type I.—The young patient, the child, who has definite fixed diabetes, and who needs continuous Iletin administration to maintain health and efficiency.

Type II.—The young patient with symptoms of only short duration but definitely those of diabetes mellitus in whom the Iletin seems to set aside the symptoms entirely, and there is apparently continuous health and efficiency without further administration of Iletin. I have thus far had only one case, but I have heard of others and feel that probably more will be found when heads of families will see that the urine of their children is examined systematically and an intensive treatment, including the use of Iletin is immediately undertaken.

Type III.—The definite adult diabetic who cannot handle sufficient calories to maintain life at a certain degree of efficiency without Iletin.

Type IV.—The old obese patient, frequently also arteriosclerotic, who often chafes under the restrictions of a diet and wishes more leaway. This is the type which is likely to develop gangrene. It is not unlikely that these patients will be saved from such a complication. In two of my patients of this type who already had well-developed gangrene of the toes the use of Iletin undoubtedly favored healthy granulation and extensive amputation was not necessary.

Type V.—The case presenting the symptoms of diabetic coma. This is not a distinct type in itself as coma may occur in any diabetic, but it is more likely to occur in types one and three. From the reports of other observers I infer that the Iletin treatment is more likely to be successful in types one and three than in type four. I can certainly bear testimony to the impression that in type four, coma, while it may not occur so readily, when it does occur it is more difficult to overcome, and Iletin does not seem to fill the purpose as it does in other cases.

Limitation of Treatment

I have already suggested that not all patients having diabetes require Iletin treatment. This statement should be preceded by one declaring that not all patients presenting a glycosuria require Iletin treatment. The adult, with the transient glycosuria and the nephritic case with glycosuria, need no such treatment. In fact great harm and danger may arise from an attempt to use Iletin in these cases. In the true diabetics the treatment is necessary only in those who continue to have sugar in the urine, or to have a blood sugar above 0.15 to 0.17 on a diet furnishing less than approximately 30 calories per kilo. To use it in other cases at the present development is somewhat of a luxury, especially in cases of adults. In children the case may be different, as has already been suggested.

The reason for speaking of it as being a luxury in the above defined cases is because the substance is still rather expensive—four and one-fourth to seven cents a unit. Sometimes as much as fifty to seventy units a day are necessary. Besides, unless the patient or a member of the family can be safely entrusted to administer the hypodermic, the expense of a nurse or a physician who can come to the patient one to three or four times a day must be added. It must also be remembered that the diabetic who becomes an Iletin patient can scarcely do so before first becoming a hospital patient, because a hospital organization, including skilled laboratory workers and experienced dietitians with a director of that department, seems necessary, with the present knowledge and experience. The "carbohydrate tolerance" and the required and safe dose of Iletin necessary for each individual patient must be established in a hospital. Already hospitals and private institutions are finding that the diabetic department does not cover expenses unless a super charge is made in that department. It is possible with additional knowledge and experience the method of treatment can be simplified so as to make it less exacting and less expensive. It is encouraging to know that men of large experience in this work, such as Joslin of Boston, and Campbell of Toronto, are keen to this situation and already are suggesting more simple methods. Unless this point is recognized there must be established heavy endowments of centers where this work can be carried on at a nominal expense so that the treatment may be available for the middle class and for the poor, and also for those without any resources whatsoever.

Plan of Treatment

The plan of treatment with Iletin which has been gradually developed by my colleagues and myself at the Mercy and the Columbia Hospitals is about as follows: The patient is required to come to the hospital for from three to four weeks. If the case is a severe one the time may be longer. We are hoping and striving to make it shorter. Daily collections of the urine are taken, and the blood sugar is estimated once or twice a week, or as often as the exigencies of the case demand. The diet to which the patient had been accustomed is continued for one or two days, and roughly estimated as to the number of grams of carbohydrates, proteids and fats. The weight is taken. The patient is not allowed to remain in bed the entire twenty-four hours of the day, unless he is too weak to be up. He is encouraged to go out doors and to take a prescribed walk. We have long ago learned the necessity for such care. When the laboratory data are at hand such changes are made in the diet as we formerly used in carrying out the "Allen-Joslin Method," as we have been accustomed in the past ten years to denominate it.

On the day the patient's urine becomes sugar free the blood sugar is estimated. If this is low, that is, at or below 0.10 or 0.12, the diet is carefully increased until a trace of sugar appears in the urine. Iletin is then given hypodermatically about one-half hour before each meal, beginning with from three to four units at a dose. If, when the trace of sugar appears in the urine, the caloric intake is as much as or more than 30 per kilo, it is usually decided that Iletin is not necessary. This decision may depend on certain economic and other factors. If the patient's means are limited, and especially if it is thought that it will be rather difficult to carry on the treatment at his home later on account of distance from the hospital or of difficulty in establishing satisfactory relations with the family physician, Iletin is not begun unless later experience proves that the case is more severe than was first thought. If, on the other hand, the patient does not become sugar free on the Allen-Joslin treatment, Iletin is begun with a very small dose, perhaps one to two units given hypodermatically before each meal, and gradually increased. At the same time the diet remains fixed for the time at the value already determined. As soon as the urine becomes sugar free the blood sugar is estimated, and *accordingly the diet and the Iletin are increased or diminished together or separately.* It must always be kept in mind that a reduction of diet or an increase of Iletin may bring on the grave symptoms of hypoglycemia. There is a certain feeling of restlessness, internal tremor, and oppression beneath the sternum. There is shortness of breath and anxiety. If the hypoglycemia is decided, such as 0.05, there may be convulsions. These symptoms will subside promptly by having the patient take the juice of an orange or plain sugar. When the blood sugar is high, that is 0.17 or more, there is of course very little danger of producing hypoglycemia with a single dose of Iletin.

The plan which we have adopted may not be the most expeditious, but we feel it is safe, and in the long run is satisfactory.

Our plan is to get the patient as nearly as possible upon a diet which represents about thirty to thirty-five calories per kilo of body weight, depending upon whether it is a growing child or an adult, with as little Iletin as possible, and given in the smallest number of doses. In some cases one dose a day is sufficient; in others four doses a day are necessary, the fourth being given after midnight. At the same time we aim to keep the urine sugar free and the blood sugar below 0.17. The gratifying experience in the use of Iletin is that even if these ideal conditions cannot be established, even though the blood sugar remains at the high level of 0.17 or higher, and sugar continues to appear in the urine, if the carbohydrates are increased in the diet, and if sufficient Iletin can be administered to metabolize it, the patient will improve apparently just as satisfactory as if he were sugar free. This I have noticed in several of my patients.

The most difficult part of the whole plan of treatment is necessarily that part which follows after the patient leaves the hospital or one's direct supervision. Before the use of Iletin, it had become quite possible to instruct patients about food values and how to test their urine for sugar. In this way a "home treatment" could be fairly successfully carried on. To this régime must now be added the antiseptic handling of a hypodermic syringe. Some one, either the patient, a member of the family, a nurse, or a physician must be detailed to inject the serum, and certain instructions must be given with reference to the symptoms of an overdose of Iletin and the treatment to be established when an overdose is given. I have not adopted a definite plan as yet to meet these added requirements. But with nearly every patient leaving the hospital or my immediate care, thus far satisfactory arrangements could be made. Either the family doctor came to the hospital and got the necessary information, or a nurse or a member of the family undertook the work. In some cases the patient prefers to administer the hypodermic himself. It is no small task to see that the serum is at hand for each patient at the right time and in sufficient amount. In my own work thus far this is done through my office. Weekly shipments are received from Eli Lilly & Company and the necessary amount is distributed to each patient from time to time. By correspondence and by having the patients report in person from time to time rather satisfactory contact has thus been kept up.

Results

What are the present results arising from the use of Iletin and what will be the ultimate results? In my own experience it is plainly evident that a patient's carbohydrate tolerance may be elevated by means of Iletin in a way that I have never experienced before. The patient gains weight instead of losing, and he is physically and mentally more efficient. Though it has happened that my experience in my cases of diabetic coma has not been satisfactory, I believe it is of great value in this condition. I am informed by others that the young patient or the adult without complications is more successfully handled with Iletin in diabetic coma than the old complicated case, such as my two unsuccessful cases were. Of one thing I am sure, and that is that the horror of diabetic gangrene is now a thing of the past.

As to whether an ultimate cure can be expected in certain cases, and as to how long the treatment must be or can be safely carried on, our present short experience does not warrant a definite answer.

In conclusion I wish to express my indebtedness to the office and hospital force, Wm. A. Bradshaw, M.D., John O. Woods, M.D., Miss Emma Traphagen, R.N., Mrs. Miel, Laboratory Technician, and Miss Crawford, Stenographer, all of whom added their labor and enthusiasm to this time-consuming work.

THE CANCER PROBLEM*

HAROLD L. FOSS, M.D.†

DANVILLE, PA.

Since the Geisinger Memorial Hospital opened seven and one-half years ago nearly six hundred patients with cancer have been admitted for treatment. Almost without exception these patients came late in the course of the disease; they nearly always do, and they will continue to, not only in our institution but in all the hospitals throughout the land and in all lands, or will until the campaign of education among the laity and the profession of which this meeting is a small part, begins to make itself definitely felt.

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*Read on "Cancer Day" at Danville, Pa.

† Surgeon-in-Chief, Geisinger Memorial Hospital.

In the late war 55,000 of our men were killed, while in the two years during which we were involved 180,000 people died in the United States of cancer. At least 50% of these lives could readily have been saved! Why this unnecessary loss? There is but one answer. They died because they were not treated or because they were treated *too late*. It is an accepted fact that thorough operative removal of the primary tumor offers the only means of cure and offers a certain means of cure if the operation is performed early in the course of the disease. It is an accepted fact that the early diagnosis of cancer is recognized to be the one factor of the greatest importance in the successful control of the disease. Then, with these basic principles so definitely established, why must we continue to look forward to the absolutely unnecessary loss of 45,000 people annually in this country? Again there is but one answer: it is a matter of petrified ignorance on the part of the patient and, unfortunately, far too often ignorance on the part of the medical profession.

Let me, at this point, read short abstracts from ten histories taken at random from the records of the cancer patients admitted to the Geisinger Memorial Hospital during the past seven years. These histories are typical of many others in the record room of our hospital. They are typical of hundreds of thousands of cancer histories in the hospitals throughout the land. They are typical of millions of unrecorded histories throughout the world.

(1) Man—Age 67—*Eighteen* months ago developed a small ulcer on the inner side of the cheek. Was diagnosed as a "stomach boil" and treated with a mouth wash. Seven months later the patient noticed several lumps under the angle of the jaw. For the latter condition received "electric" treatments and massage. Now has a large ulcerating cancer of the cheek with extensive metastasis in the cervical glands. Condition, absolutely inoperable and incurable.

(2) Woman—Age 57—About *12 months* ago noticed a small, painless lump in the right breast but was afraid to consult her physician about it although it gradually increased in size. Nearly a year later was discovered by her doctor while he was examining her chest during an attack of influenza. Comes to hospital with an advanced, ulcerating carcinoma of breast with extensive axillary and supraclavicular metastasis. Condition hopelessly inoperable.

(3) Man—Age 51—*Three years* ago developed an ulcer on the glans penis which was treated in one hospital by circumcision. As condition did not improve he went to a second hospital where the condition was cauterized. From time to time during the past two years this treatment has been repeated. Now has an extensive epithelioma involving all of the glans with ulcerating inguinal metastasis. Thoroughly hopeless.

(4) Man—Age 60—For *two years*—had been troubled with a "cold sore" involving the lower lip. Has had it lanced and poulticed from time to time under the direction of his druggist. Now comes to hospital because of pain. Has a large epithelioma of lip with extensive secondary involvement of the submaxillary glands. Operation can offer nothing but temporary palliation.

(5) Man—Age 43—Ill for *eight months*. Dull pain in lower abdomen, at times colicky. Increasing constipation. Rapid loss of weight. Small stools. Blood and mucus from bowel. Treated medically for "chronic appendicitis" and later for "piles." *A rectal examination never made*. Comes to hospital with large mass in rectum. Exploration reveals advanced carcinoma of rectosigmoid with extensive liver metastasis. Condition, hopeless.

(6) Woman—Age 41—Ill for *one year* with bleeding from uterus. For several months this has been constant. Treated by home physician with local applications for "ulcer of cervix." Another physician later amputated the cervix, no pathological examination of the tissue being made. As bleeding had continued and patient had lost much strength she finally came to hospital. Extensive, inoperable, epithelioma of cervix and vaginal wall.

(7) Woman—Age 42—Noticed a mass in lower abdomen *over 12 months* ago. Gradually increased in size. Says she was always "ashamed" to consult a physician and so took up the matter with Lydia Pinkham. Mass is now so large and distress so marked that patient comes to the hospital. Examination reveals advanced cancer of fundus of uterus with extension into broad ligaments and retroperitoneal glands. Incurable.

(8) Woman—Age 62—Mass in breast for *several months*. Gradual increase in size. Consulted her family physician (a very good one) who told her to stop worrying and to "forget it." Later consulted an osteopath (an unusually bad one) who told her to have it removed at once. Comes to hospital. Carcinoma of breast with metastasis in axilla.

(9) Man—Age 74—For *several years* has had a large pigmented mole on the back. His physician recently treated the lesion by tying a string about it and pulling it out. Now has a large ulcer the size of the palm of a hand with many palpable glands in axilla. Diagnosis: Sarcoma with general sarcomatosis. Hopelessly incurable.

(10) Woman—Age 37—Lump in breast for *twelve months*. Consulted her physician who gave her some medicine to rub on. Mass continued to develop and so consulted a second physician who told her to have it removed *in a month* if it did not get better but in the meanwhile to try an ointment which he prescribed. As no relief was obtained from the ointment, patient consulted a chiropractor who gave her treatments three times a week for two months. Between the medicine and the salve and the spinal adjustments and, above all, the delay, the patient now has a large ulcerating carcinoma of the breast with inoperable metastasis in the axillary glands and mediastinum.

All of these ten patients were dying when first seen at the hospital. All were far beyond the slightest aid, their conditions were hopeless, they were absolutely doomed. All ten could have been cured had they consulted a reputable physician as soon as they first noticed evidences of trouble. Thousands of such patients are needlessly dying of this terrible malady every year.

WHY DOES THE PATIENT WAIT?

Ignorance of the facts concerning cancer are of course at the foundation. With the patient there is a mistaken notion that cancer is incurable or that the disease is a disgrace like syphilis. He knows of the publicity given the advanced and fatal case, and dreads a personal experience with it. He fears an operation and is beset with thoughts of the hopelessness of the cure. He delays while he makes a personal investigation of some advertised nostrum or the claims of some so-called "cancer specialist." There is perhaps ample excuse for some of this.

But when the patient has at last consulted his physician why should there be in thousands of instances added and often fatal delay on the part of the physician? Here again the factor is ignorance; but in this latter instance there can be no excuse. If the patient refuses to accept the advice of his physician for immediate surgical excision it is another matter; but if she fails to receive prompt and adequate treatment through negligence on his part, then upon him rests a very grave responsibility.

At ages over 40, one woman in 8 and one man in 14 dies of cancer. With these facts, and the definitely established fact before us that cancer is always curable early in its course, the cancer patient who consults her physician consults a man who does *not know his business* if he treats a suspicious symptom without first making a careful examination; or if in the presence of characteristic signs he adopts a policy of watchful waiting; or if he treats a suspicious lesion with medicines or corrosive pastes or caustics; or if he temporizes with patented nostrums advertised as "cancer cures" or permits optimism to replace a careful physical examination; or if he permits laziness to delay a thorough investigation of such warning signs as a growing lump in a female breast, an abnormal discharge from the uterus of a woman past the menopause, or persistent indigestion especially in the patient past forty-five years of age.

Ninety per cent of the patients with cancer who have come to the Geisinger Memorial Hospital in the past seven years have come with advanced lesions, often hopelessly inoperable. The average duration between the onset of symptoms and the time of admission to the institution has been one year. Not five per cent have come within three months of the beginning of the trouble. Nearly all had received some sort of treatment ranging from the application of caustics to pow-wowing.

The patient is not alone to blame; neither is the physician. There is the surgeon who does not know *his* business and at times is the worst offender of all, his chief offense being the indiscriminate operating on the hopelessly advanced case of cancer, effecting nothing but to satisfy his own desire to operate on something, and thereby causing the patient added and thoroughly unnecessary suffering and bringing surgery in cancer into disrepute.

Ninety thousand deaths from cancer occur each year in the United States. The disease ranks among the leading causes of death and is exceeded in importance only by tuberculosis with one hundred and ten thousand deaths, pneumonia with one hundred and twelve thousand, and heart and kidney disease with one hundred and fifteen thousand. Tuberculosis is no longer looked upon as equivalent to a death sentence, and the same should be true of cancer, but we must first overcome in our campaign that atmosphere of despair and sense of fatalism about the disease that is all too prevalent among not only the laity but the profession as well.

The success of the conquest of cancer rests largely in the hands of the patient himself, but he must be educated; and next to the patient it rests in the hands of his truest friends, the qualified physician and surgeon.

CARCINOMA OF THE BREAST

WITH ESPECIAL REFERENCE TO CERTAIN PRECANCEROUS LESIONS

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Inasmuch as cancer in general is still on the increase, as shown by statistics compiled by Hoffman (90,000 deaths in 1920 in the U. S. A.) and since cancer of the breast is still responsible for a large number of these deaths, it seems worth while that the subject should again be discussed and that the writer's conviction that any "lump" in the mammary gland, occurring at any age, is pathological, does not belong there, and is potentially dangerous should again be emphasized. It is desirable to do this because we have of late heard much from a clinical and pathological source which is undoubtedly more optimistic but which the writer believes is at variance with his own experience as well as with the usually accepted thoughts on certain diseased conditions of the breast. I firmly believe that, until much more evidence is presented increasing our too limited understanding of the normal and its physiological variations of the mammary gland, more lives will be saved by proceeding much as we do now in removing all benign tumors and sacrificing the gland if necessary in those past 35 years for "benign (precancerous) lesions," than by an elaborate subdivision of these cases into groups and subgroups each of which has its indications either for not operating at all or for removing the diseased area only.

It is admitted that the objections to the term "precancerous" are well taken and that all of the instances of the particular disease referred to as precancerous do not become cancer. In spite of this fact, however, there is no other term which so well expresses this dangerous potentiality in a certain percentage of cases. From a clinical point of view it is sufficient that cancer exists where there was before a benign lesion. Such happens in a fairly large number of instances of cancer of the lip, skin, uterus, etc., and since this is so, why should it not happen fairly frequently in the mammary gland, admittedly given to epithelial unrest?

In recently analyzing the records of 217 breast cases occurring in my father's and my own practice, three facts stand out: 1. A large percentage of these cases are inoperable when first seen (25% of our own cases and 29% Cancer Commission of State). 2. If a diagnosis of carcinoma of the breast can be made with practical certainty before operation, not over 30% will be cured. 3. If a diagnosis is made in the "precancerous" stage, 100% of cures will result. If in the stage of "microscopic" cancer, about 72%.

These facts have led to the convictions that: 1. The symptoms of cancer of the breast as ordinarily described are, for the most part, late symptoms. 2. Until the actual cause of cancer is found and a new treatment based on that discovery is established, we must learn to recognize the "potentiality" of cancer rather than the "actuality." 3. The knowledge which we now have is sufficient to cure a much larger percentage than is now cured, if universally applied.

If the ordinary symptoms of cancer of the breast leading to a diagnosis of the disease with practical certainty are only followed by about 30% of cures at the most, what, if any, conditions of the breast may be considered "forerunners" of cancer?* A recent analysis of 200 consecutive cases occurring in our series showed there were of

Carcinoma,	83	cases	or	41.5%
Chr. cystic mastitis,	67	"	"	33.5%
Benign tumors,	30	"	"	15.0%
Papillary cyst adenoma,	6	"	"	3.0%
Tuberculosis,	6	"	"	3.0%
Sarcoma,	5	"	"	2.5%
Galactocele,	3	"	"	1.5%

Only two of these conditions can be definitely ruled out from consideration in thinking of malignancy, namely, tuberculosis and galactocele.

From this series it will be seen that next to carcinoma in frequency is chronic cystic mastitis. It is a firm conviction that this condition is not only a common disease of the breast but is in a real sense "precancerous." In a personal series of 100 cases of chronic cystic mastitis, 23 showed microscopic carcinoma which could not possibly have been determined from a clinical examination. This is entirely in keeping with others' experience. Warren estimated that 13% had undergone malignancy when submitted to the microscope, Theile 15%, Speese 25%, Bartell 26%, Means and Forman 40%. Chronic cystic mastitis can be easily diagnosed clinically as it has a rather definite symptomatology. It is more common in married women than in single but it will be found in those married women usually who have been sterile or have been unable to nurse their children. The disease does occur in the male sex but is of course rare. Judd reports 11 instances, and there were three in the author's series.

It occurs most frequently between 40 and 50 years. In the 100 cases mentioned above between 10 and 20 years there were 3 cases; between 20 and 30, 11 cases; between 30 and 40, 24 cases; between 40 and 50, 48 cases; between 50 and 60, 8 cases; between 60 and 70, 4 cases, and between 70 and 80, 2 cases.

It is often bilateral (in this series in 20%). The most characteristic symptom is pain—quite the contrary to carcinoma, which, when it develops *sui generis,* is unfortunately painless. The pain of chronic cystic mastitis is diffuse and worse at the menses. It varies from what is described as a "dragging, heavy" sensation to a more or less sharp pain, particularly if the gland should be pressed upon by clothing, etc. The patient will usually complain of one or more lumps in the breast which are sensitive to palpation. On examination, if only one breast is involved it will usually be slightly larger than its fellow. The superficial veins are apt to be more prominent on the affected side. One or usually more masses will be discovered on palpation in the gland tissue which are tender to pressure—again quite in contrast with carcinoma, as in the latter there is nearly always one mass fading into the surrounding breast tissue which is not tender to palpation. In chronic cystic mastitis there is no fixation of the overlying skin as in cancer, nor is there fixation to the chest wall. There may be a discharge from the nipple of a thin watery substance.

As to the benign tumors, of which there were 15% in this series of 200 cases, we all are aware that occasionally one of these tumors, an adenofibroma or intracanalicular myxoma for example, may undergo malignant change. Usually this form of malignant change will be sarcoma developing upon a myxoma. Several of the cases in the malignant group showed this sequence.

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* Rodman, J. S.: Southern Medical Journal, May, 1920.

Next to chronic cystic mastitis, the most interesting condition, perhaps, is papillary cyst adenoma. Of these there were 6 in the series of 200, and 4 of them had undergone malignant change when examined by the microscope. So convinced am I that this condition is potentially malignant that I always regard these cases as such and carry out the same treatment as for unquestioned carcinoma. Papillary cyst adenoma, or as it has been called intracystic papilloma, usually occurs in married women past 40, is painless, but has a pathognomic symptom, and that is a discharge of pure blood from the nipple. No tumor will be found on palpation but this discharge of blood may be exuded from the nipple by pressure. There is a cyst in this instance which is centrally located just behind the nipple and into the lumen of which has grown the papilloma.

What improvement can be made in the curative management of these cases? I cannot, of course, discuss what x-ray and radium in combination with surgery may have to offer in the future. I do believe that the x-ray has helped in the postoperative period and that radium also does its share in the inoperable cases, prolonging life and making it more bearable. I believe that surgery is and will continue to be, until the cause of cancer is found, the best therapeutic weapon we have. It is most interesting to study the improvement in results that has gone hand in hand with improvement in operative technique. In 1880 S. W. Gross claimed 10% of 3-year cures of cancer of the breast, when his contemporaries were curing none, because he used a much larger skin incision than they. Sir Mitchell Banks added an axillary dissection and cured 23%. The foundation of the modern operation, however, was laid by Halsted, who was the first to remove the pectoral muscles, mammary gland and axillary glands in one piece, although Willy Meyer, of New York, at about the same time and quite independently advocated the routine removal of the pectorals. Halsted reported 35% of cures. This was a great step in advance and all of the modern operations are based on the Halsted principle. In very recent years one of the greatest contributions to the knowledge of carcinoma of the breast has been the work of Hadley, who showed that carcinoma extends along fascial planes and that metastasis from the breast to the liver by way of the rectus sheath is a common occurrence, so that the rectus sheath is now taken in order to block such extension in this direction.

Has modern operative technique left much to the imagination to make it more thorough in the future? I believe that it has not. The results have been distinctly encouraging but still not good enough. Volkmann thought that if patients were free from recurrence at the end of three years after operation, a radical cure could be affirmed. It is now customary to think of cures only after five years have elapsed, and even then we must admit there will be a few who will show recurrences or metastasis. In 68 of the cases of carcinoma of the breast occurring in our practice, 49 or 72% were symptom free after 3 years, and 34 or 50% five years and over, 14 or 25% 10 years, and 6 or 8% for 15 years. Dennis and Cheyne have also reported 50% of 5-year cures.

Ewing states, in his excellent book on Neoplastic Diseases:

"The scope of the operative field having apparently reached a limit, the chief hope for reduction in the mortality from mammary carcinoma lies in its prevention and earlier diagnosis.

"Both these objects point to the excision of many breasts before carcinoma has become established in the clinical sense. The growing tendency to remove the breast for recognized chronic mastitis or suspected carcinoma, while probably sacrificing some organs unnecessarily, has justified itself in the writer's material by securing the early removal of some miniature carcinomas, and more *'precancerous'* lesions. In this field too much reliance should not be placed on the examination of resected areas and nodules. When the condition of the organ becomes sufficiently suspicious to demand a partial excision for diagnosis it is usually safer to excise the whole breast, make the diagnosis complete, and remove a source of anxiety or actual danger."

CONCLUSIONS

1. Cancer of the breast is a curable disease if radical treatment can be instituted sufficiently early.

2. As there are no known early symptoms of cancer of the breast as such we must learn to recognize the conditions which are potentially malignant and deal with them in the light of this potentiality.

3. There are definite "precancerous" condi-

tions of the breast of which chronic mastitis and papillary cyst adenoma are the most important.

4. Fifty per cent of the cases of definite carcinoma can be cured by the proper radical treatment, but not over 30% can be cured when the clinical diagnosis can be made with certainty. The percentage of cures should be much greater if all cases of a "precancerous" nature could get proper treatment.

5. Herein lies the hope for improvement in results as it is unlikely that surgery, our principal therapeutic reliance, can be made more extensive or thorough as an operative technique.

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MENTAL MEDICINE OF YESTERDAY, TO-DAY AND TO-MORROW*

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The history of insanity, recognition of this condition as one of disease and application of therapeutic measures for its relief and cure is replete with mysticism, cruelty and bloodshed, following through the ages with the religious beliefs and emotionalism of the people and slowly forging its way from the darkness of superstition to the light of the twentieth century with its progressive humanitarianism and scientific medical knowledge.

As we go back in the history of the world and its people, we find from the study of hieroglyphic records, unearthed in the tombs of Egypt, that while at that prehistoric time, the conception of insanity such as prevails to-day was not recognized, the obscuration of human intellect did not escape the keen perception of the priests, who after a manner of their peculiar religious practices, treated the mentally afflicted in one of two ways. If the spirit to which they believed the condition to be due, was an evil one, it must be driven out by the most active religious procedures and the patient was compelled to pass through many heroic ordeals. If, on the other hand, the spirit was a good one, no interference was had and the sufferer was treated with deference and even at times regarded as inspired.

Sacred history gives many evidences that the Hebrews were conversant with abnormal mental functioning. King Saul, 1063 B. C., is recorded to have removed his clothing, remaining naked day and night and attempting to kill David by hurling a javelin at him. His is probably the first recognized case of homicidal mania. The Feast of Belshazzar presents a beautiful description of acute alcoholic hallucinosis and introduces in the person of Daniel a prototype of the modern Freud who deciphered the writing on the wall and applied psycho-analysis to the interpretation of the submerged complexes as manifested in the dreams of the King. The Jewish idea of the genesis of insanity was, however, entirely thesistic and priests were physicians of the mind and soul.

The Greek poets, philosophers and historians all refer in their writings to cases of insanity, and Herodotus mentions the history of three sisters who became insane simultaneously, running wild through the woods, making animal-like noises and who were cured by the use of veratrum album and by bathing in a mountain stream after they had been chased by youths until they were in a state of profuse perspiration.

The Romans at about 500 B. C. drafted definite laws providing for the care of the insane and defining the types of cases that could be cared for at home and those which should be confined for the good of the public, and these laws have fundamentally remained unchanged and form the basis of our present lunacy statutes.

During the 1300 years beginning with the first recorded mention of insanity in 1700 B. C., there was being contributed by many people in various lands something to the common fund of mental medicine and the time was now ready for some master hand to accumulate this great bulk of material into some definite shape. In 460 B. C. on the island of Cos was born Hippocrates, the Father of Medicine, who laid the first foundation of the science of psychiatry. At this time philosophy embraced and controlled all phases of human knowledge, and while he possessed but a slight understanding of the brain and conceived of insanity as a disease of the soul which sometimes resides in the head, and at other times has its home in other parts of the body, he emphatically denied the relation of the gods and devils to the condition, depicted symptoms of mental disorder and applied to their relief certain therapeutic measures such as elimination, hydro and physical therapy which are as valuable to-day as when advocated by him more than 3,000 years ago.

During the next 500 years, no marked additions were made to the knowledge of mental disease until Galen, 131-201 A. D., added his contribution, which represented a culmination of the science of all medicine in the Greek school. He made a classification of mental diseases, dividing them into mania, melancholia, dementia and imbecility. He believed mental disorder to depend upon a sympathy and connection with disease of internal organs chiefly, and for the treatment of mental disease he had an extensive armamentarium of drugs and included in his therapy many types of baths, massage with inunctions, gymnastics and recreational activities in the form of theatrical performances.

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*President's Address, read before the Montour County Medical Society, January 19, 1923.

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With the decline of the Greek school which began about 200 A. D., there came a period of more than 1300 years, when ignorance and superstition overspread the world like a dark cloud, and much of the scientific knowledge as to symptoms, diagnosis, prognosis and treatment of mental disease was forgotten. Mental beliefs and practices became overshadowed with alchemy and astrology. Theosophy and necromancy came to abound in all parts of the earth, and by the end of the third century of the Christian era, the insane everywhere were again regarded as afflicted of God or possessed of the devil or his attending imps. Their symptoms were mistaken for willful demonstration of wickedness and they were treated accordingly in prison cells or in cells attached to the cloisters under the care of the priests. Epidemics of insanity occurred and thousands of the insane wandered about in neglect and terrible suffering as all doors were closed and all hands were raised against them, since they were, as taught and believed by many, deserted by God Himself, who delivered them to vile spirits for imaginary sins which they often confessed. To complete this chapter of horrors, there arose out of the cruel animal depths of human nature, the fanatical, diabolical belief in witchcraft and an eagerness to persecute and kill those who were accused. It is estimated that between 1400 and 1700 A. D., no less than 100,000 persons were tormented or burned to death as witches and that of this number not less than 30,000 were insane at the time they were accused and executed.

During the fourteenth and fifteenth centuries, there was a definite forward movement as relating to plans for the segregation and care of the mentally afflicted. Italy, Spain, England, France and Belgium began their crude attempts at custodial care, and from this beginning one of the finest of the European Hospitals for the Insane can be found to-day at Gheel, which was begun in 1472.

Beginning with the sixteenth century, the darkest hour in the history of the insane passed, and 1500 A. D. saw the beginning of a better day approaching. Platter, Zacchias and Alpin, all contributed to a better understanding of mental medicine.

We are all familiar with the stories of Pinel and Tuke and what they accomplished during the latter part of the eighteenth century in the matter of reforms in the care of the insane, but it was 25 years after Pinel's great triumph in France, when he unchained the insane from the walls of their dungeons, separated the male from the female and replaced their pallets of straw with beds, before the next advance was made. In 1817, Esquirol advanced a definite pathology of insanity and in 1838 secured the passing of the law by which the modern treatment of the insane in a humanitarian spirit was effectively organized in that country on a sound basis.

Meanwhile in Germany, two great schools of psychiatry developed. Heinroth analyzed the mental faculties and taught that psychic theory of the common origin of insanity and sin, while Jacobi established the Somatic School and taught that the brain was not the organ of mental activity and that the causes of insanity were to be found in the disorders of the organs of respiration, circulation and especially the large intestine. It remained, however, for Griesenger in 1845 to demonstrate the inadequacy of the views of both of these schools, and with his contemporary Virchow, the acknowledged head of exact medicine of the nineteenth century, to establish the diagnosis of diseases of the mind upon a definite basis of scientific research and sound pathology.

Psychiatry, therefore, as a definite branch of medicine, is among the younger sciences and has not as yet reached its first centenary.

In 1850, Mendel, an Augustinian monk, began a series of experiments with garden peas, which later was applied to the study of mental disorders and resulted in the development of the theory of heredity which the passing years has amply served to confirm and which to-day is recognized as one of the important contributory factors in the production of mental deficiency and mental disorders. Then in 1890 came that great psychiatrist and brain anatomist, Meynert, who gave to the world the first adequate conception of the location in the brain of the centers of intellect.

Turning to conditions in our own country, we find that while in 1751 an act was passed creating the Pennsylvania Hospital at Philadelphia and providing for a department for the reception and care of lunatics, it was not until 22 years later that the first American asylum for the insane was constructed at Williamsburg, Va.

Then came Benjamin Rush, the "American Sydenham," to mention whose name is to recall to every physician the profound impression made by him not only upon general medicine in America but upon the treatment of the insane.

His professional career covered the period from 1769 to 1813 when he died, and among his extensive medical works, the last one published in 1812 was "The Observation upon Disease of the Mind." This great work is said by Ray to have been "The first of the kind in the English tongue displaying thorough observation and original thought."

Rush treated the insane at the Pennsylvania Hospital and while he regarded insanity as sickness, he had somewhat limited views as to its nature and believed it to have its primary seat in the blood vessels of the brain, and it is not necessary to repeat the well-known history of his faith in the lancet. He employed bleeding in melancholia and mania and in most cases prescribed blisters, emetics, purges and a reduced diet, his theory being that venesection was necessary in consequence of there being no outlet from the brain to receive the usual results of disease or inflammation, particularly the discharge of serum from the blood vessels.

From 1825 to 1850 came a change in the therapy as advocated by Rush. Todd, in the Hartford Retreat, insisted upon a generous diet and recommended tonics and narcotics in the treatment of the insane; and Bell in 1841 wrote that the "practice of bleeding, violent purgations, emetics, vesications and derivations has passed away before the light of experience."

Quinine, port wine, arsenic "brandy and bark" were prescribed. Tr. opium in doses of one to three drams was administered in mania and melancholia, and inhalations of ether and chloroform were used to allay excitement and produce sleep. In 1865 bromides and chloral came into use and the use of opium was reduced to small doses and combined with hyoscyamin. In 1880 the Weir Mitchell rest treatment became a further development of the supporting treatment and there was begun a diligent use of massage, faradism, hydrotherapy and gentle gymnastics coupled with what was known as the moral treatment and which represented simply the beginning of our present day occupational and diversional therapy.

Among the names conspicuous in the advancement of mental medicine in the latter half of the nineteenth century are those of two women. At the beginning of the century, the environment of the insane patient was the cage and the almshouse. He was shunned by men and his affliction capitalized, until 1849, when Dorothy Dix began fearlessly calling legislators to their duty and bringing to pass the construction of adequate hospitals for the insane. Then too, there arose the problem of nursing, which first began in France with Pinel. Jacobi in the third and fourth decades described the kind of attendants he desired for his patients. Ray wrote of the ideal attendant and Curwen published rules for their instruction, but as late as 1854 these types of men and women had not been obtained and it was doubted if the humane and sympathetic service required would ever be obtained unless it was prompted by religious spirit. And then, in this same year, came the Crimean War and with it Florence Nightingale, who brought about the reform of nursing in the general hospitals. The alienists had striven for years for such a reform in the hospitals for the insane and now they strove the more, and in 1892, the centennial of Pinel's great year, there were nineteen such training schools in America, all established within ten years, and among these was that of the Danville State Hospital, the first to establish such a school in the state of Pennsylvania and which still numbers upon its active nursing staff three of its first class of graduates.

The present quarter of the twentieth century has brought together and developed all that was good in what our fathers began centuries ago, and has added much that is new to our understanding of the mentally ill and their care and treatment.

The clanging of chains and the noise of the whip are no longer heard in the maniac's cell, the tranquilizing chair of Dr. Rush and his prescription, "if punishment should fail of the intended effect, it will be proper to resort to the fear of death," have passed into oblivion never again to be recalled. Throughout the civilized world there stand hospitals in the true sense, where the idea of detention is subordinate to that of cure.

We recognize and differentiate to-day 21 types of psychoses. We have learned that the brain, as the organ of the mind, is subject to the influence of both endogenic and exogenic factors and that underlying abnormal mental functioning may frequently be found an inherited nervous instability that, coupled with the stress of environment, the exigencies of life and the effect of disease processes elsewhere in the body, may be productive of organic changes and altered function of the brain, which are expressed by acute or chronic mental manifestation. We are familiar with the various mental symptoms associated with tuberculosis and syphilitic infection, with the depression of diabetes, the delusional mental states of malignant disease, the confusion attending arteriosclerotic and cardiorenal conditions, the delirium of infectious diseases and the mental manifestations due to drugs, alcohol and other exogenous poisons; and to the diagnosis and treatment of these conditions are brought to bear all that science has accumulated for 4,000 years. Psychology, biology, chemistry, pathology, bacteriology, serology, internal medicine and surgery contribute their quota to the psychiatrist in his study of the mind.

To-day in the field of mental medicine, three lines of investigation stand prominently in the foreground: psychoanalysis, focal infection and mental hygiene. The first probes the field of the unconscious in an effort to establish the psychic factors that may be productive of pathological mental manifestations and applies for their relief a purely psychic therapy. The second represents a further development of the beliefs and practices of the old somatic school and diligently seeks to account for all mental symptoms by the discovery of pathological conditions in other organs than the brain. The third seeks to carry to the individual and the community the principles underlying mental health and to apply these principles to the prevention of mental disease.

What lies forward we must leave to the future to reveal. We know that we are but in the morning of progress. What its height may be it is not given to us to understand. As Bulwer pathetically says, it passes "beyond the verge of the horizon to which the eyes of my generation must limit their wistful gaze"; and yet from the past we may at least gain a prophetic glimpse of what lies beyond the veil. Wait we for a Pasteur of psychiatry? It may be so, but I am inclined rather to believe that a slow but progressive evolution will continue and its peak will only be attained when the individual is understood as a whole. It is not enough that we recognize in an isolated way either hereditary, psychogenic or somatic factors. Psychoanalysis of itself will not solve the problem; the discovery of foci of infection in the teeth, tonsils and gastro-intestinal tract will account for but a limited number of mental diseases, and the findings of the bacteriological laboratory and necropsy room will of themselves prove of but limited value. There must be a correlation of the mental, physical, bacteriological and pathological findings in the individual case ere we may hope to read the psychic riddle. I believe that ere this century closes, laws of eugenics will have solved to some extent the factor of heredity, the laboratory will have given us valuable information as to metabolism, blood chemistry and the endocrine glands, the physician practicing general medicine will understand the underlying factors that may be operative from childhood and practice preventive mental medicine as he now practices preventive physical medicine. And while mental diseases, like physical diseases, will always exist, and as a result insanity will always be with us, the day will come when we will to a great extent at least understand and master the condition.

CAVERNOUS SINUS THROMBOSIS*

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There has been some discussion as to whether thrombosis of the cavernous sinus should come under the domain of the ophthalmologist or the otolaryngologist. This condition, however, is equally interesting and pertinent to both the above mentioned specialists, and in fact, might very profitably engage the attention of the neurologist, brain surgeon and (from the standpoint of prognosis) the internist and general surgeon.

For the privilege of reporting these cases I am indebted to the courtesy of Dr. A. A. Stevens of Philadelphia and Major Ralph Goldthwaite, M.C., U. S. A. Case I was observed from its very incipiency and we were fortunately able to secure an autopsy. Curiously enough, the autopsy findings are almost exactly similar to those of the first case described by Duncan.

Case I—A. L. C.—Male, aged 22, admitted to hospital July 10, 1920, with an acute running right ear of two days' duration. On July 15th, a simple mastoid operation was performed, and pus found in the attic, and also in the mastoid tip. Convalescence from this operation was uneventful. July 22d, the patient became very uncomfortable, and on the 23d, developed a temperature and a suggestion of swelling of the right upper lid. Next morning the swelling of the lid was definite, and progressing steadily. The mastoid was again opened, and the lateral sinus packed, following which the swelling of the eye apparently stopped for about 12 hours; but by noon of the 26th (24 hours after operation) it had progressed to such an extent that the globe was fixed, and there was marked bulbar chemosis and swelling of the lids. Ophthalmoscopic examination revealed hyperemia of the disc, the edges of which were slightly blurred, and a moderate dilation of the retinal veins. An incision through the tarso-orbital fascia at the upper inner angle of the orbit was now made. Free bleeding followed. A rubber tube with gauze drain was inserted. The following evening (July 27th) slight swelling of the left lower lid appeared, and progressed somewhat, but by July 29th had practically disappeared. On July 31st, the patient awoke early with a headache and severe pain in the back. On August 3d, a spinal puncture showed streptococcus hemolyticus. The patient became worse and died on August 5th.

Autopsy showed an old thrombosis of the right cavernous sinus. At the inner end of the petrous portion of the temporal bone suppuration had occurred, with considerable erosion and fragmentation of the bone. This was marked in the vicinity of the cavernous sinus, in which situation about 1 c.c. of thick yellowish pus was found. The process extended through the petrous portion to a lesser degree, and along the line of the carotid canal to the operative depression in the mastoid. The right posterior clinoid process had sloughed off. The sphenoid sinus contained a small amount of clear fluid. Bacteriologic findings: Cerebrospinal fluid streptococcus hemolyticus (pure culture); right cavernous sinus (a) streptococcus hemolyticus, dominant, (b) staphylococcus albus; sphenoid sinus (a) streptococcus hemolyticus, (b) staphylococcus albus.

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*Read before the Section on Ophthalmology of the College of Physicians of Philadelphia.

Case II—P. M., Male, aged 39, admitted to the Philadelphia General Hospital November 12, 1920, complaining of pain in the head and neck and swelling of the eyelids and neck.

Five weeks previous to admission the patient had pulled a hair from the left nostril. Abscess developed rapidly, broke spontaneously, drained freely and was apparently healing nicely. Three days later the patient began to suffer from severe headache and general malaise, and the tissues of the forehead and root of the nose became slightly swollen.

Physical examination revealed a mottled and reddish-blue discoloration of the face, especially in the region of the nose and eyes. The face was puffed and the eyelids discolored and edematous. That part of the neck just below the left occipital region was apparently slightly swollen. There was exophthalmos of both eyes, marked restriction of ocular movements, pain on pressure over the base of the skull and muscles of the neck posteriorly, and over part of the sternomastoid on the left side. Slight tenderness along the entire left jugular vein.

On November 14th, the eyelids were so edematous that the patient was unable to open them. There was marked chemosis and the ocular movements were practically abolished. The pupils were contracted, but reacted to light. The deep tissues of the neck and right preauricular region were much swollen and the swelling now extended down to the clavicle. Under novocain anesthesia incisions were made in the right preauricular region, on both sides of the neck, and rubber drains inserted.

Ophthalmoscopic examination disclosed hyperemia of both discs, the edges of which, however, were quite sharply defined. The retinal veins were markedly dilated and exhibited arteriovenous constriction. Rhinologic examination by Dr. A. J. Keenan, revealed a deflected nasal septum and nostrils filled with crusts, but no pus.

November 16th, the patient was seen by Dr. F. O. Lewis, who advised operation on the cavernous sinus as the only possible hope of recovery. The patient's condition became so critical, however, that this was deemed inadvisable. He died early the following morning. We were unable to obtain permission for an autopsy.

Thrombosis of the cavernous sinus was first observed by Duncan in 1821, and in 1868 Herman Knapp called attention to the symptomatology, and brought out clearly the points of differential diagnosis.

From an etiological standpoint there are two main types of cavernous sinus thrombosis: (1) the primary noninfected, marantic or marasmic, when it ensues or develops on an enfeebled circulation and the prostration of debiliating diseases; (2) the secondary, inflammatory or infected type, when it is produced by the irritation of contiguous necrosed or carious bone or the passage through the vessel walls of infective material. The latter is by far the more common type, and in a review of 140 cases, Dorland Smith gives the following sources of infection: ear, 40%; face and orbit, 35%; mouth and throat, 13%; nose, 9%. Recoveries in all types of cases, 7%.

The close relation of the sphenoid sinus to the cavernous sinus is remarked by Thompson, who thinks this the cause of most cases, and who recommends a postmortem examination of the nose and necessary sinuses in all cases.

The diagnosis of cavernous sinus thrombosis is not difficult, provided it is bilateral (and it usually becomes so), especially when there is added the picture of general sepsis and a history of infection in the area drained by or in the structures adjacent to the cavernous sinus. If unilateral, however, it may be necessary to rule out such conditions as orbital cellulitis or periositis, erysipelas, arteriovenous aneurysm of the orbit, or cavernous sinus, dacryo-adentis, tenonitis, thrombophlebitis of the ophthalmic veins and traumatic conditions. If the thrombosis extends to the pterygoid plexus, edema of the tonsil and pharynx on the same side results; if to the lateral sinus and jugular vein, edema over the mastoid and neck ensues; and when the facial vein is thrombosed, edema of the face occurs. When the inflammatory focus is within or near the orbit, the diagnosis may be very difficult.

The fundus picture is usually that of congestion. Choked disc and optic neuritis have been reported, but thrombosis of the central vein does not seem to occur. The ptosis and immobility of the globe are usually ascribed to pressure paralysis of the nerves in the cavernous sinus. It seems more likely, however, that these conditions are mechanical in origin and a result of the orbital edema.

Among the operations proposed are: The temporal route of Dwight and Hartley which, as far as the approach is concerned, is almost the same as Krause's operation for resection of the Gasserian ganglion; the orbital route of Mosher, which requires removal of the eye and also the outer wall of the orbit; the ethmoidal-sphenoidal route of Langworthy, and Luc's operation through the antrum of the opposite side. Hartley successfully removed a sarcoma from the cavernous sinus. Dwight found that an incision in one sinus would drain both. Mosher operated on one case unsuccessfully, but later did ten operations on cadavers and thinks the operation very feasible. Bircher's case seems to have been the only one successfully operated upon. Drainage of the lateral sinus has appeared to help many of these cases.

It is to be hoped that the operative technique necessary to combat this condition may soon be developed, as has been done in the case of thrombosis of the lateral sinus. In order to equal the results now obtained in this latter condition, however, it would seem that we must be much more acute in the early recognition of thrombosis of the cavernous sinus than we have been in the past.

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AIDS IN THE DIAGNOSIS OF SKIN DISEASES*

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There are few branches of medicine that are as old as dermatology and still fewer branches in which, for many practitioners, diagnosis is so difficult. When a student is told that there are two kinds of skin diseases, those cured by unguentum zinci oxidi and those not, he soon loses all enthusiasm for their study and differentiation. It is only when he is confronted with a private patient suffering from a severe cutaneous eruption which may be any one of a number of conditions, that he realizes his shortcomings and, unfortunately for both him and his patient, finds that unguentum zinci oxidi does not live up to its supposed reputation.

Before discussing actual diagnosis in skin diseases, a few preliminary remarks would not be amiss. It must not be forgotten that, as in internal medicine, histories are important and particularly any history relating to previous cutaneous disturbances. Such knowledge aids in determining the sensitiveness of that particular patient's skin and enables the physician to avoid applications such as mercury or sulphur to skins intolerant to them. A history of gout, asthma, gastro-intestinal troubles in the parents may indicate certain hereditary taints or special conditions, such as anaphylaxis. As regards the eruption itself, not only ought it to be examined by daylight whenever possible, but its mode of onset, course, duration and the functional disturbances (itching, pain, etc.) with which it is associated, must be determined. A cardinal point, which few dermatologists fail to observe, is to examine, not only the part indicated by the patient but the *entire skin.* Many a diagnosis has gone awry through failure to strip the patient. Indeed, in many instances, it is impossible to diagnose the condition present by merely examining the parts indicated by the patient. Furthermore, the mucous membranes and the buccal mucosa in particular, participate in so many cutaneous eruptions, that no dermatologic examination is complete unless the mouth is included. For example, syphilis, lichen planus, erythema multiforme, Duhring's disease, pemphigus and varicella are but a few of the diseases of the skin with buccal manifestations.

From a clinical viewpoint, inspection is by no means the only aid we possess in the diagnosis of cutaneous disease. Individual cutaneous lesions are likewise studied by means (a) of the magnifying glass, which enables us to determine properly the size, shape, color, surface, etc., of the individual lesion; (b) palpation particularly to determine the consistency of the lesion; (c) curettage for its use in determining the structure of scales, crusts and underlying tissue; (d) acupuncture in the diagnosis of leprous nodules and syphilitic lymphnodes; (e) dioscopy or vitropressure for its aid in the diagnosis of lupic tubercules.

ACTUAL DIAGNOSIS

The actual diagnosis of a cutaneous eruption depends not only upon its distribution, though that is important, but chiefly upon an analysis of the primary or elementary lesion. Without this, no diagnosis is, as a rule, possible. Exceptions to this are, for example, in scabies when the primary lesion—the burrow of the itch-mite—cannot be found and the diagnosis, not infrequently is based upon the distribution of the secondary lesions. However, it is a cardinal rule to search diligently for the characteristic primary lesion, care being taken not to be misled by lesions which have been altered by scratching or secondary infection. Thus, again taking scabies as an example, the burrow may be entirely replaced by the pustules of impetigo, by scratch marks and even more or less large patches of eczematized skin. But it is not only in these commoner dermatoses that the elementary lesions are altered but the rare dermatoses may participate in this as well. Thus it sometimes happens that an exfoliative dermatitis is simply a generalization of a seborrheic eczema, a psoriasis or a lichen planus, a case of which I have but recently observed. It would seem, therefore, that the best way to approach this subject would be by a study of the elementary lesions, as well as the secondary lesions, based on a clinicopathologic basis.

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*Read before the Mt. Sinai Clinical Society, February 27, 1923.

Elementary skin lesions are, in a way, analogous to the primary lesions in other organs, in the sense that no organ can react to irritation of any sort in but a few ways, though the result of the irritant be quite varied in its origin. Thus, for example, the lung reacts to irritation such as would be produced by many different bacteria, foreign bodies, cardiovascular disease, etc., by congestion and edema, by consolidation, by abscess formation—really a limited number of pathologic conditions. The same limitation as to pathologic phenomena is equally true with regard to the skin—congestion and edema represented by erythema, vesicles, bullae and edematous papules; consolidation represented by papules, tubercles and nodules; and abscess formation represented by pustules and ulceration. By means of this conception of skin pathology the following brief clinical synopsis of the elementary skin lesions are readily understood. Erythema would refer to a simple spotty (macular) or diffuse redness without palpable or elevated lesion, which disappears more or less promptly on pressure. Vesicles are small elevations of the epiderm containing fluid, whereas bullae, clinically, are simply large vesicles. Edematous papules are really elevated erythemata composed of serous exudate and a few extravascular cells. These lesions may be pinkish or whitish, sometimes itchy (urticaria), sometimes not (autographism), and like erythema can be reduced by pressure though they quickly reappear. Papules are small solid superficial palpable lesions which leave no scar when they disappear, whereas tubercles are similar lesions, but due to the nature of the irritant, are associated with destruction of the germinative skin layer and therefore produce subsequent scar formation. These, as well as nodules, which are really large tubercles, are special to syphilis, tuberculosis and leprosy. Pustules, clinically, are vesicles containing pus, and an ulceration is a cutaneous tissue loss extending into the derm. The skin, like other organs, tends to protect itself and does so by the production of what have been termed secondary lesions, namely scales, crusts, lichenification, and pigmentation. Scales are horny accumulations; crusts, dried up exudates; and lichenification, a special cutaneous alteration characterized by thickening and hyperkeratosis.

The classification of cutaneous diseases is based upon these characteristic elementary lesions. After these have been determined, the clinical type may be deduced from their location, mode of grouping, any modification produced secondarily, age of patient, occupation, etc. Thus, for example, lupus vulgaris is characterized by a very special tubercle with special localization to the face, and beginning at an early age; whereas dermatitis herpetiformis is a vesico-bullous eruption with lesions grouped, most commonly, in a herpetiform manner and often crusted from the trauma of scratching.

SPECIAL DIAGNOSIS

The diagnosis of cutaneous entities is not as easy as the above would lead you to suppose. The reason for this is not very far to seek. As in pathologic manifestations in other organs, clinical diagnosis in diseases of the skin is confronted with many borderline cases, which often make it difficult to classify a given dermatosis along the lines of the well defined dermatological types. Because of this, it is well to point out the commoner errors. Before proceeding, however, it might be well to remark that a knowledge of the histopathology of cutaneous eruptions might be as important an aid in their diagnosis as would be, for example, the prognosis in the case of chronic parenchymatous nephritis based upon similar grounds. Thus, psoriasis, psoriatic syphilides and psoriatic seborrheic eczema are not infrequently confounded. But the lesion of psoriasis, when gently curetted, will elicit the punctate hemorrhages from the traumatized hypertrophied vascular papillae of the derm, the serous oozing of the interstitial edema in the mucous body of the epiderm in seborrheic eczema, the diffuse bloody ooze from the cell-infiltrated, traumatized, syphilitic papule.

Osler's dictum, "know syphilis and you know medicine," applies to skin diseases as well as to diseases elsewhere. To know skin diseases, one must certainly know the cutaneous manifestations of syphilis, as this is the one disease which may simulate any dermatosis. Therefore think of syphilis, both acquired and congenital, systematically, and even if the Wassermann reaction is negative, try the therapeutic test in all cases presenting suspicious lesions. Never fail to think of syphilis in lesions resembling alopecia areata, lupus vulgaris, which is rare in America, keratoses on the palms and soles, or impetigo in adults. On the other hand, do not confound syphilis with hydroa of the buccal mucosa, geographic tongue, buccal herpes, lichen planus of the mouth, pityriasis rosea for the macular rash of secondary syphilis, the papules of a facial acne for syphilitic papules.

The mycoses and sporotrichosis in particular, are commonly mistaken for tuberculosis and epithelioma. This is a serious mistake as the iodids are badly supported by the latter two conditions, whereas they cure in the former.

As regards the less serious affections, it is well to remember that the ring-worm fungi may vegetate at any point on the body and produce lesions altogether different from the typical round lesion common to them. The knowledge that these organisms may cause such polymorphous lesions is but recent. This polymorphism is particularly common to the epidermal forms of ring-worm infection and present themselves as a simple intertrigo, as interdigital dermatitis, as ill-defined scaly lesions on any part of the body and even as vesicles and bullae on the hands and feet, particularly the soles. In children all furfuraceous scalp conditions or loss of hair call for a mycologic study. Dry impetigo, in the form of dry, scaly, fairly well-defined lesions, due to the streptococcus or staphylococcus, are by no means uncommon on the faces of children.

Itching, no matter what the social status of the patient may be, always means, first, the elimination of any parasite-scabies or pediculosis as an etiologic factor, and then diabetes, tabes dorsalis and excess coffee or tea drinking.

The correct diagnosis of an eczema with its vesicles, oozing and diffuse borders is always important, for to irritate it with unsuitable drugs simply leads to an exaggeration of the condition.

There are certain "precancerous conditions" of the skin that ought to be known to all. These are the eroded senile keratoses, the localized thickenings of a leukoplakia, the cutaneous horn, the inflammations about the areola of women, and naevi subject to constant irritation and trauma. With regard to the inflammations about the areola of women it is well to remember that an eczema of the areola is generally due to scabies or lactation.

The cutaneous manifestations of drug tolerance, particularly those drugs apt to be eliminated by the skin, are worth remembering. Among these are the iodic acne, bromide vegetations, arsenical pigmentation and palmar keratoses, the bullous and fixed eruptions of the coal tar products and phenolphthalein. Bizarre eruptions of any sort should lead to an exhaustive inquiry into the question of drug ingestion. Not infrequently, should the questioning be but superficial, the patient will say, "Oh, no, I never take drugs"; but close questioning will elicit the fact that headache tablets (which in the main contain quinine, bromides and coal tar products) or laxatives (phenolphthalein in particular) are not considered drugs by the patient but are being taken regularly.

Occasionally acute inflammations about the face and eyes follow the habitual use of hair dyes. Such inflammations may follow a single application or may not develop for many months and even years after the patient first began the use of the dye.

The furunculosis and genital pruritus of diabetes is well known.

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CONCERNING THE SIMPLIFICATION OF THE SEROLOGIC DIAGNOSIS OF SYPHILIS*

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The intensification of interest in preventive medicine has, as might be expected, led to a concentration of studies upon syphilis one result of which has been the establishing of two salient facts: First, the danger of relying upon physical signs and characteristics as the sole basis for diagnosis; and, second, as a corollary to the former premise, the necessity for the utilization of some method or test whereby the demonstration of syphilitic infection or its residuum may be made with some degree of certitude.

Attention, therefore, has been focused upon serologic methods of diagnosis with particular reference to the perfection and standardization of the complement-fixation reaction, and also with a view to the development of simplified methods of diagnosis by various serologic tests and manipulative methods.

It may be maintained without much fear of contradiction that the most reliable test at present known for the detection of serologic evidence of syphilitic infection is the complement-fixation test. Much of the criticism heretofore aimed at this method can be attributed to one or more of the following factors: 1. A lack of knowledge concerning the true mechanism of the test. 2. Imperfections of technic. 3. Faulty application and interpretation of the test by the clinician. 4. The extraordinary number of individual variations of technic, all more or less influencing the delicacy and reliability of the method. 5. Lack of agreement among clinicians and serologists as to the interpretation of "border-line" reactions. 6. Lack of a standardized method of performing the test on a strictly quantitative basis whereby the results of all workers could be correlated with each other and with the clinical findings.

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Modern studies have not, it is true, brought to light the exact nature of the substance or substances responsible for complement-fixation in syphilis. They have, however, elucidated much negative knowledge of value. We now know that many factors once held more or less responsible are *not* implicated or of significance, while the technical improvements and refinements which have been elaborated have added much to the reliability of the test.

Standardization of the test is by no means a remote possibility, and certain fundamentals, such as the use of multiple antigens, including the cholesternized extracts, fixation in the cold, and careful titration of all reagents are common to nearly all workers.

Not the least valuable or important lesson to be drawn from the accumulated studies of numerous workers has been the appreciation of the necessity for careful technic, beginning with the collection of the specimen by the clinician; of the various factors *outside the laboratory* which may exert a marked influence upon the conduct and results of the test and may even vitiate it entirely; and especially, of the vital necessity for the careful and intelligent interpretation of the reaction in its relation to the particular case.

In spite of all efforts there are still instances—happily less numerous than heretofore, but still too common—of clinical failure to utilize or interpret the reaction intelligently, of failure to realize that it constitutes only *one* phase of an examination which should be most thorough, careful and complete.

In these modern days the failure to make the diagnosis of syphilis or the making of a false diagnosis are heinous offences, the penalty for which is paid, however, by the patient and even by his family, friends and associates. The responsibility for the incalculable aftermath is the physician's. It must be realized, therefore, that there is not and never will be any method devised whereby the diagnosis can safely and infallibly rest upon the machine-like manipulation of an isolated test. It will never be possible to drop a specimen in the slot and receive a diagnosis automatically.

One of the criticisms of the complement-fixation test has been that it is complicated and hence open to errors of technic and only feasible to those especially trained. That the test is more or less complicated to the general observer can be readily admitted. That this constitutes a valid objection to its use is open to discussion.

The value, delicacy, and reliability of any method of examination is directly related and proportionate to the skill and knowledge of the user and his ability to utilize and apply it properly. The use of the stethoscope is a very mysterious performance to the layman. The sphygmomanometer and other, to the physician, equally understandable clinical devices attain remarkable heights of complexity to those uninformed and untrained in their use. On the other hand, there are certain few procedures of the laboratory relatively quite simple to those familiar with them which are not always as simple to those who request and apply their use.

In a certain sense the inherent complexity of the Wassermann test is one of its safeguards, in that its proper performance necessitates a thorough understanding of the numerous factors concerned and an equally thorough training and experience in its manipulative details, with the result that the better manipulative and other sources of error are understood and appreciated, the more carefully are they checked, controlled and avoided.

The fact that careful, thorough, and extensive training fortified by experience is required for the proper and intelligent performance of the Wassermann test is, it may be maintained, one of its greatest safeguards as restricting its performance to those especially adapted to its use and interpretation. It is unequivocally not a test to be performed by those whose knowledge of its mechanism is at best superficial; it is not a procedure to be hastily or lightly undertaken in the office.

Every attempt to supplant the test by simplified methods of serologic examination has been accompanied by the plea that the new method will furnish the physician with a simple test which can be rapidly, readily and satisfactorily made in the office without either laboratory training or equipment and, consequently, each new method at once attains a certain vogue.

But the time will never come when safety and certainty in the diagnosis of syphilis will be comprised in merely a test tube, a drop of serum, and a reagent. The test may be standardized but the personal factor of interpretation will always remain, and always it will be the skill of the manipulator which will form the final standard by which the value of the procedure will stand or fall.

Much of what happens in the biochemistry of the body as a result of syphilitic infection still remains to be discovered. That various changes in the blood serum occur has been shown by the work of numerous investigators. Of particular interest, as being the basis of most of the serologic "short-cuts" proposed for diagnosis, is the floccule formation occurring with numerous reagents.

Various reagents, more or less colloidal in character, have been tried from time to time, starting with so simple a reagent as distilled water and proceeding to the complicated "perethynol" of Vernes.

As the result of the work of numerous investigators, which it is unnecessary to cite here in detail, it has been shown that when added to colloidal solutions, luetic sera show more or less pronounced ability to produce flocculation, varying with the colloidal solution used and also with the concentration of electrolyte present.

Whether the phenomenon thus produced is dependent upon chemical or colloidal changes in the sera is not known. It has been shown, however, that the degree to which it occurs is subject to marked variations with different reagents and, what is more important, with the same reagent under variations inherent in the sera, and what is of still greater importance, that in a perceptible number of instances the phenomenon occurs with normal sera in the absence of syphilis and is entirely absent in the sera from known cases of syphilis.

It is relatively easy to produce a flocculation reaction by the addition of various colloidal solutions to syphilitic sera, but to produce them constantly and inevitably in all stages of the disease at a given time is another matter. It is possible to devise such tests and to obtain with them a varying percentage of agreement with the Wassermann reaction *in a relatively small series.* Invariably, so far, when a sufficiently large series has been made under careful control, a sufficiently high number of false positives and negatives occurs to render the method unsafe for use. It is always possible to standardize a test but it will never be possible to standardize the serum content of the reacting substances in patients whose individual capacity to react to infection is always variable.

That the blood serum in syphilis presents variations from normal in its refracto-viscosimetric properties, in its relation to floccule formation when brought into contact with colloidal solutions, and in the content and character of its globulin fraction cannot be denied; but that any or all of these properties are constant or bear such a relation to the age or intensity of the infection that they can be used as an infallible means of diagnosis may be greatly doubted.

It is natural that the idea of replacing careful clinical study by an infallible test which could be made in two minutes with no other apparatus than a test tube should contain a certain appeal. No such reaction will ever be devised, however, and no method or test will ever relieve the conscientious physician of the necessity for a careful historical, physical, clinical and laboratory study of each patient who trustfully places himself under his care. A too hasty adoption of any of the so-called simplified methods is dangerous and to be decried.

The inherent qualities of the complement-fixation test which necessitates careful training for its successful performance constitute, at present, one of the greatest safeguards of serologic methods of diagnosis in syphilis.

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THE TREATMENT OF APPENDICEAL PERITONITIS*

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In recent years comparatively little has been written on the subject of peritonitis complicating acute appendicitis. Even at the present day, authorities differ widely as to the proper method of treatment in these cases. There are a few who do not advocate the removal of the appendix in severe cases, being content merely with drainage and performing appendectomy as a secondary operation. Many surgeons flush out the peritoneal cavity with saline solution, while others prefer merely the dry mopping of accessible pus. Some believe in leaving the wound wide open, employing massive gauze packing. It seems to be the general policy of most surgeons to establish drainage in nearly all cases, either through the wound alone or through an additional stab wound with drain leading to the pelvis, the patient being placed in the Fowler position, and given the Murphy drip.

It is the purpose of this paper to deal chiefly with the closed method of treatment first advocated in 1901 by Dr. Robert T. Morris of New York. In 1910, Dr. J. J. Buchanan reported to the Medical Society of the State of Pennsylvania 22 cases treated by this method, with 2 deaths. The method consists in appendectomy, liberation of adhesions when they exist, mopping out the accessible pus and closing the wound without peritoneal drainage. Reliance is placed on the wonderful absorptive power of the peritoneum to take care of any pus which remains, the source of infection having been removed.

From 1910 to 1921, our records show 90 cases of peritonitis accompanying appendicitis. The appendix was removed in every case but one. In 53 of these 90 cases there was no apparent rupture of the appendix, but in all there was a considerable amount of purulent or seropurulent material. In a large percentage the appendix was gangrenous, frequently being filled with pus and on the verge of rupture. It is a well known fact, moreover, that a septic peritonitis may exist without a ruptured appendix. I do not mean to create the impression that in all of these 53 cases the peritonitis was septic; in many it was of the defensive variety.

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In the other 37 cases there was a diffuse peritonitis with perforated appendix, peritonitis accompanying an abscess or peritonitis from a ruptured abscess. This last type of case—peritonitis resulting from a ruptured abscess—is generally fatal, except when the abscess is very small. I have seen a number of these patients presenting the following history: an acute attack dating back 9 to 12 days, followed by more or less pain in the right lower quadrant and usually an elevation of temperature, the general condition remaining good and the patient believed to be convalescing. Suddenly there is a very severe pain due to the rupture of the unsuspected abscess. The abdomen becomes rigid and distended, peristalsis is absent, the skin is clammy, the pulse thready, the expression anxious, continuous stercoraceous vomiting—in short a picture with which you are all familiar—the patient dying within a few hours, having passed the stage where surgical interference would be of benefit.

Cases of acute appendicitis without peritonitis and cases of localized appendiceal abscess are, of course, not considered in this paper.

Of the 53 cases in the first group, in which there was no apparent rupture of the appendix, the abdomen was completely closed in 45. In the remaining 8 some form of drainage was employed, either a slender rubber tube, cigarette drain, or both.

In the second group of 37 cases, i. e., those with peritonitis from ruptured appendix, abscess with diffuse peritonitis, or diffuse peritonitis resulting from ruptured abscess, no peritoneal drainage was used in 21, some form of drainage being used in the remaining 16.

Let us now consider the reasons for drainage in these cases. In a considerable number the stump of the appendix could not be buried, being inaccessible or the parts very friable. Here, a cigarette drain was sometimes, but not always, employed. In many others there were gangrenous areas in the bowel and a cigarette drain was generally deemed sufficient in these. The purpose of such a drain is not drainage, but the establishment of a tract to the suspicious area as a precaution against a ruptured bowel and contamination from leakage. Where there was an abscess cavity in conjunction with the peritonitis, this cavity was naturally drained with tube and cigarette drains. In some other cases there were large areas of bowel covered with plastic exudate or extensive cellulitis of the retroperitoneal tissues. Here, also, some form of drainage was used. In no case was counterdrainage established in the pelvis through a stab wound. No patient was placed in Fowler's position. Irrigation and suction were never resorted to.

We shall now take up those cases where there was complete closure of the abdomen. In them there was no localized area requiring drainage, and it is our contention that the entire peritoneal cavity cannot be drained, regardless of the location of the drain or the position of the patient in bed. Within 24 to 48 hours the tube will become sealed off by adhesions and very little pus will then escape. Furthermore, we believe that the promiscuous use of a tube in all cases of peritonitis is harmful rather than beneficial, for a foreign body has been introduced, with the possibility of contamination from the outside world. The chances for a fecal fistula or an intestinal obstruction are also increased. I might mention here the greater tendency to postoperative adhesions following drains and especially gauze packing, although I believe that too many symptoms are unjustly attributed to postoperative adhesions.

Among the 90 cases under consideration, there were eight deaths, which I wish briefly to summarize. The first was the case of a boy 6 years old, who was very sick on admission to the hospital: temperature 102.4°; pulse 140; respirations 42; râles in both chests; abdomen markedly distended and rigid. The appendix was acutely inflamed, but not ruptured, the abdomen containing a large amount of pea soup fluid. On account of the poor condition during operation ether was discontinued and he received only 5/8 ounce in all. The abdomen was closed without drainage. His condition became rapidly worse and he died at 2 a. m. the following morning, apparently of a general septic condition.

The second case was that of a man of 52 who had a weak pulse before operation. The appendix was acutely inflamed and buried in old adhesions, but not ruptured. The neighboring intestines were covered with plastic exudate and there was a considerable amount of pea soup material. The stomach, duodenum, and gallbladder were normal. The abdomen was closed without drainage. The following day the pulse and respirations became worse and the patient died—probably a cardiac death.

Among the cases due to ruptured appendices and ruptured abscesses there were 6 deaths. In 4 of these, drainage was employed for one of the reasons stated above, while in the other 2 no drainage was used. Five of the deaths were from peritonitis and occurred from 10 hours to 5 days after operation. The average duration of the attack previous to operation in these 5 cases was 3 days. In two there was a definite abscess which had ruptured and which had doubtless existed for some time before the so-called "present attack" began. The sixth patient died of a double pneumonia 13 days after operation, the peritonitis having cleared up.

You will doubtless ask what complications were encountered in the patients who recovered. Many of them naturally developed infections of the abdominal wall from the pus with which the wounds were bathed. Occasionally primary union was obtained. One patient required a secondary laparotomy for intestinal obstruction 18 days after appendectomy. The obstruction was due to dense adhesions about the terminal ileum, liberation of which allowed the passage of gas into the collapsed bowel. The patient was discharged well 15 days later.

In four of the 66 patients who were not drained (45 in the first group; 21 in the second group), a local abscess later developed. Two of these abscesses were incised and drained through the abdominal wall, one through the rectum, while the fourth ruptured into the rectum. One case developed a fecal fistula and a blood stream infection with septic parotitis and middle ear disease. Of the 24 cases that were drained, two developed localized abscesses, one being opened through the abdominal wall and the other through the rectum. One of these two also had a fecal fistula into the vagina. These seven patients all recovered.

You will note that the most frequent complication is the development of a localized intraperitoneal abscess, which I believe occurs just as frequently in cases treated by the various open methods. On the other hand, such complications as fecal fistula and intestinal obstruction are less common—two of the former, both of which closed in a short time without intervention, and one of the latter being encountered. I believe that in the future the percentage of localized abscesses may be decreased by a more thorough search at the time of operation for pools of pus between the coils of bowel and in the pelvis.

CONCLUSIONS

There is no single method of treatment adapted to all cases of peritonitis.

1. Cases in which there is a diffuse peritonitis, with little or no tendency to formation of adhesions, are best treated by appendectomy, mopping out the pus, and closure without drainage.

2. Cases in which the diffuse peritonitis has nearly subsided and localization is well on the way, may be left to nature and operated on after the abscess wall has well formed. (Ochsner.) These cases do not come within the scope of this paper.

3. Cases in which there are dense adhesions with numerous pus pockets are further advanced and more serious. The adhesions should be broken up and the pus mopped out and any definite cavities drained.

4. Cases which are moribund when first seen by the surgeon should be left, with the hope that their condition will improve. Any operative procedure at such a stage will only hasten their death.

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THE DIAGNOSIS AND TREATMENT OF DISEASES OF THE RECTUM

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In handling the subject assigned me, "The Diagnosis and Treatment of Diseases of the Rectum," I propose to separate from this large subject a few of the symptoms brought to us by our patients and attempt to explain their value and position in the diagnosis of the diseases they might indicate, and then to say a few words about the chief points noted by examination. The patient comes to us saying he has piles. Piles, to the patient, means anything from pruritus to cancer. It means any disease that the rectum might be subject to. It is the term used by the patient to tell you that he has rectal trouble. Please, never take the patient's diagnosis. He does not know. He wants you to give him a suppository or salve or pill to cure him without the annoyance of an examination. He dreads the thought of being examined as much as you dread examining him. He invites you to shirk that examination and is pleased if you do. It takes a direct effort on your part and a contest with the patient's mind to obtain a look and feel at that rectum. Too often the course of least resistance is taken and the patient gets what he is begging for, but what he will be the first to condemn you for—treatment without examination. I could cite many cases that have come to my notice where the above course was followed with dire results.

Let me beg of you to find out what symptoms represent the patient's conception of piles and analyze what they might mean and follow this by an examination.

Pain is probably the most frequent symptom brought to our attention. This varies from discomfort to an exceedingly severe pain. A severe pain starting during or at the end of a bowel movement and lasting from ten minutes to several hours afterward, associated with spasmodic contractions of the sphincter, is almost invariably a fissure. A throbbing pain to one side of the anus, worse during defecation is usually an abscess. A sharp pain during a constipated movement, followed by a tender painful swelling is suggestive of an external thrombotic hemorrhoid. A dull aching pain at the anus with a sense of fullness, suggests internal hemorrhoids. A simple feeling of fullness would suggest a cryptitis. When a patient complains of severe pain at the anus always think of four conditions: fissure, external thrombotic hemorrhoid, abscess, internal blind fistula. (I exclude cancer, for the pain of cancer usually comes so late in the disease that it is rarely the symptom complained of by the patient when he comes to us for diagnosis.)

Internal hemorrhoids are rarely very painful unless they are strangulated and ulcerated to the skin edge. Let me emphasize the fact that lesions involving the anal skin and mucocutaneous junction and sphincters are painful. Those that involve only the mucous membrane are practically free from pain.

Inquire from the patient three things, viz.: the character of his pain (whether dull, severe, bearing down, or sharp and cutting); the location (at the anus, to either side, at the coccyx or in the perineum); and the relation to defecation (before, during or after).

The next symptom complained of may be *protrusion.* Many times the patient says he has a protrusion and has attempted to put into the rectum an external hemorrhoid which never did belong inside. Protrusion may indicate prolapsed hemorrhoids, partial or complete prolapse of the bowels, hypertrophied papillæ, polypi, villous tumors, or any pedunculated tumor. Examination alone will clear the diagnosis.

Discharge is a frequent symptom and may mean fistula, eczema marginatum, cancer, prolapsed internal hemorrhoids (often a small portion of internal hemorrhoid is peeping from a partially relaxed sphincter and discharges mucous which eventually excoriates the perianal skin giving a free discharge and a painful surface.)

Hemorrhage is a very helpful symptom to the diagnostician. Inquire whether bright red or dark; whether it is a dripping or a free forceful projection; whether it is simply a streak on some portion of the movement or thoroughly mixed with the feces; and what relation it has to the bowel movement. Free forceful projection bleeding coming after the movement, is usually from an ulcerated hemorrhoid. A small amount of bright red blood after the movement, associated with severe pain, is indicative of fissure. Dripping of blood with or after the movement also suggests hemorrhoids. A small spot of blood on the paper may mean a fistula or a fissure. Dark offensive bleeding, associated with pus and mucus, indicates malignancy or severe ulceration of a nonmalignant type.

Bleeding always demands—not suggests—investigation. We may never have a patient complain to us of bleeding, no matter what the age, without a careful investigation as to the cause of that bleeding. It may be only a fissure or an ulcerated internal hemorrhoid and the chances are that it is, but it might be a malignancy. If there is no symptom except a slight amount of bleeding—in fact, particularly if there are no other symptoms—examine that patient and determine without any doubt that there is no cancer. Find that bleeding point. Every patient with bleeding from the rectum is a potential cancer case. Many times it is the very first symptom noted and frequently when it is first noticed, the case is already too far advanced for radical removal. This makes it imperative for the physician to lose no time finding every case of cancer as soon as it presents itself if we are to improve our mortality rate in this disease.

Itching of the anus means either intestinal parasites, diabetes, or pruritis. Pruritis is not a disease. It is only a symptom. It varies from a discomfort to an itching that almost drives the patient to despair. To determine its cause requires a care and persistance that may try the patience of doctor and patient. It may be secondary to any disease of the rectum. I have found it most frequently follow a cryptitis and promptly yield to proper treatment of this condition. The most severe cases with thick, parchment-like skin, with cracks and moisture covering the whole perianal region are most likely caused, as suggested by Murray, of Syracuse, N. Y., by an invasion of this skin area by a specific infection, and yield gradually to treatment by a carefully prepared autogenous vaccine.

After hearing the symptoms and getting the story of the patient's complaints, one can frequently suggest a diagnosis. But never make such a mistake. Always make a careful examination. The disease suggested by the history may be present, but it may be something different, or what is more frequently the case, there may be some associated condition—two separate pathologic entities.

For examination of the patient, I find the most convenient position is the left Sims' position, with knees drawn well up toward the chin. Always make the first examination without preparation of the rectum or perianal skin. You want to see that rectum as it is under usual condition.

For a sigmoidoscopic examination it may be necessary to cleanse the rectum by enemas, but even for this higher examination I prefer at first to attempt it without cleansing.

Inspection allows us to note the appearance of the skin, and we can diagnose an eczema marginatum or a pruritic skin. We can see the external opening of a fistula, veneral warts, external hemorrhoids, either inflamed or thrombotic, and fissuring of the perianal skin as seen in many cases of pruritis. We can also see the swelling of a perianal or an ischiorectal abscess, any acute inflammatory condition, the sentinel pile of a fissure and the fissure itself; also the bright red of a single or nest of protruding internal hemorrhoids. Before palpating ask the patient to bear down, and he may protrude piles, a prolapse or probably an enlarged papilla, polypus or other pedunculated tumor.

Palpation should never be neglected. With the gloved finger we can get more information than by using the proctoscope. And let me assure you that it is very rare indeed for one who is sufficiently careful and trained to be unable to insert the finger into a rectum, no matter how painful the lesion is, or how nervous the patient. The examiner may not hurry. He must, by very gentle pressure away from the tender part of the circumference of the anus, slowly insert the finger, and this can be done even in a patient having a fissure or an abscess. Gentleness and care as to direction of pressure mean success. Insert finger full length and sweep it around the wall of the rectum, feeling for prostate and seminal vesicles, also for any mass in rectum or surrounding it. Be familiar with feel of cervix and fundus of uterus through rectal wall and do not mistake them for tumors.

Feel for strictures and also for tender spots that may mean abscesses, fissures, internal opening of fistulæ or cryptitis. Measure the grasp of the sphincter and judge its muscular activity. Feel the condition of the coccyx and whether it is painful or too freely moveable.

Let me stress the importance of digital examination of the rectum. Eighty per cent of the intestinal cancers are within reach of the finger, and probably ninety-five per cent of all rectal diseases that come to our attention are low enough to be felt by the finger. I would recommend the use of a Martin speculum to view the rectum, and this instrument can be used as readily as a tongue depressor. The electric sigmoidoscope is probably an instrument for use by the specialist, and it is usually unnecessary for making diagnosis.

1361 Perkiomen Ave.

PRENATAL CARE IN PHILADELPHIA*

PHILIP F. WILLIAMS, M.D.
PHILADELPHIA, PA.

The efforts which The Child Federation and other similar and affiliated organizations have made in past years to better the health and reduce the mortality of the babies has shown that in many cases education of the masses and furnishing of health centers in congested districts have had markedly beneficial results. The natural outcome of the work brought sharply to the foreground the relation of the health of the pregnant woman to the health of her future child. This problem has been studied by a committee of The Child Federation for several years, and various reports and recommendations have been made. It has been thought advisable at this time to bring once more to the attention of those who have an interest in the problem of prenatal care a résumé of the scope and needs of this work in the City of Philadelphia.

There are in the City of Philadelphia, with a population of 1,823,158, fifty-three prenatal care clinics, conducted by forty agencies. Thirty-seven are conducted by hospitals, ten by the Division of Child Hygiene of the Municipal Health Department, and the remainder by dispensaries, affiliated with hospitals or teaching schools, or functioning as maternity hygiene centers with no facilities or affiliations for care at delivery. A map of the city has been prepared to show the location of the various clinics, and reveals the fact that many districts are oversupplied, while other large areas, densely populated, are without any facilities for the proper oversight of the pregnant woman.

A series of visits to these clinics made by a member of the present committee has shown that there are many patients who travel long distances from their homes to be attended by a particular clinic. Free home service by nurses or students, low priced or free hospital accomodations, religious affiliations and other motives are given as explanations. This feature of having patients living at a great distance from the clinic makes for greater difficulty in visits by social workers, nurses and medical attendants. The Chicago

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*Read before the Philadelphia County Medical Society, April 25, 1923.

Prenatal Survey report made a strong recommendation that zoning be practiced by the prenatal centers. Applied to our city it would mean that each clinic would serve a limited contiguous district. Cases applying from outside the district would be referred to the proper neighborhood center. This would prevent duplication in applications, would enable the attendants to do more intensive work, give better prenatal care, and develop a communal feeling towards the center or clinic. If put into operation here it would stimulate the formation of new centers or the establishment of substations in the areas now entirely unsupplied.

It is of interest to know how many women these clinics are seeing year by year, and the degree of care their patients have been receiving. In order to ascertain this information a questionnaire has been prepared and sent to the social worker, head nurse or supervisor of the clinic and the reported results tabulated month by month. The clerical work necessary in preparing the results has undoubtedly prevented some institutions, doing splendid work, from reporting. In others, the press of work, the lack of a quickly summarized report or an entire lack of records has prevented the public from being able to realize the amount and type of work done. However, a sufficient number of clinics have responded to the questionaire to enable us to realize that such work is being conducted for the most part in a manner of which we may well be proud, while at the same time much has been found lacking. For the present year this questionnaire has been revised to make it more easily filled in by those agencies which found it difficult to tabulate their data in the past. From it we feel that we will get interpretative results bearing on maternal and infant morbidity and mortality.

While it is almost always useless to introduce figures in any discussion, a few statistics will show the importance of conducting more and better prenatal care clinics in Philadelphia. In 1919 there were reported to the Registrar of Vital Statistics 42,047 living births, 2,102 still births, and 1,370 immediate infant deaths from congenital debility and malformations. There were 104 deaths of mothers from puerperal septicemia, and 161 deaths from other accidents of pregnancy and labor. In 1920, 43,546 living births were reported, 2,079 still births, 1,271 deaths from congenital debility and malformations; 104 mothers died from puerperal septicemia and 180 from other accidents of pregnancy and labor. So far as we can compare the reports from the prenatal care clinics which answered the questionnaire for those two years we find that in 1919, 10 clinics reported as having cared for 7,909 pregnant women, delivering 7,094 cases, over 37,000 visits were made to the clinics and homes, and 209 babies were born dead, 21 mothers died, 8 from eclampsia. In 1920, 19 clinics reported having given care to 9,173 women, delivering 7,347 of them, with over 31,000 visits to the clinic and home in 4,000 cases, 234 babies were born dead, and 13 mothers died, all from eclampsia. If our daily puerperal tragedies received as much comment and criticism as accidents in other walks of life, what stimulation to their reduction might not be effected!

A statistical study of mortality in women shows that in the past two years there has been an appreciable lowering in the number of deaths from causes connected with child-bearing, a considerable drop from the peak of the influenza epidemic years with their sequelæ of abortions and premature labors. But the rate from puerperal septicemia for the first half of 1922 does not show a much lower rate than for the year 1911. The death rate from this cause seems to run up and down in four or five year cycles, and there is no such drop as might reasonably be expected to follow the increasing amount of care given to the pregnant woman. The cause, therefore, must be laid to poor facilities for delivery or poor obstetrics on the part of the medical attendant. This cause is emphasized by Dr. Hirst in his recent essay on "Obstetric Deaths," in which he states as the first prerequisite in the prevention of deaths at labor, improved teaching of obstetrics in our medical schools. Many a good piece of prenatal work may go for naught if confinement care is inadequate. A point must be made of this because many of the maternity hygiene centers in Philadelphia take excellent care of the pregnant woman up to the time of her confinement, when she is turned over to the care of the midwife, a legalized makeshift, a student, insufficiently trained or impressed in the principles of asepsis, or to a practitioner who not seldom is imperfect in his surgical principles.

Prenatal nursing has affected mothers principally in the reduction of the toxemias. This fact stands out clearly in an analysis of the maternal deaths over a period of years. Possibly our more routine use of blood-pressure readings as an adjunct to the clinic visit has enabled us to recognize earlier and more frequently signs of approaching danger. The toxemias of pregnancy are purely preventable diseases, easily recognized at their onset in the majority of cases, and quite amenable to treatment. But such conditions cannot be recognized or suspected unless the patient is seen frequently. This brings us to a consideration of the amount of prenatal care necessary, and the minimum amount which is commensurate with the proper safeguarding of the woman. The committee has felt it advisable to specify in the questionnaire that the minimum amount of care given to the pregnant woman should include visits at intervals of not more than two weeks apart, routine examinations of the urine at each visit and an estimation of the blood-pressure. The committee has also felt it advisable to suggest that a physical examination be made of each woman at an early visit, and that a routine pelvic examination, with measurement of the important pelvic diameters, be made by the beginning of the ninth month.

The advisability of routine Wassermann reactions has been considered, but not recommended. This procedure has been carried out successfully in some clinics with a large attendance and it could be made a routine in any clinic if the medical attendant felt sufficiently enthusiastic about doing it. Undoubtedly such a procedure would lead to the early discovery of many cases of syphilis, making possible sufficient treatment to lead to the saving of many an infant life. Blood for a Wassermann reaction should be taken in all suspected cases. There are enough syphilis clinics in Philadelphia to care for all cases referred for either diagnosis or treatment.

It is a matter of fact that many abortions, miscarriages and premature labors with their drain upon the health of the mother and an appreciable lowering of the birth-rate are due to factors which could be taken care of by associated and affiliated clinics. Thus the teeth of the pregnant woman could be attended by the dental dispensary. Pulmonic cases could be cared for in coöperation with the state or hospital tuberculosis clinics. The recent institution of cardiac clinics by the Association for the Prevention and Relief of Heart Disease should enable the pregnant woman to have the benefit of expert consultation in that line. The beneficial effect of the wartime diet, low in proteins, of the central European countries, on the toxemias of pregnancy, and the newer ideas regarding the nutrition of the pregnant woman and the effect of her diet upon the growing fetus have received scant consideration in the general problem of prenatal care.

The problem of the working pregnant woman is ever present in the cases met with in most of the clinics reporting to The Child Federation. The careful oversight of these women has ameliorated economic conditions in their homes and has permitted the birth of a healthy child in a healthy mother. The close association of this problem with child-labor laws and the laws affecting the employment of women is apparent.

The tremendous aspects of the problem of prenatal care in Philadelphia have been briefly presented, with sufficient figures to show the necessity of at once arousing ourselves to the need for work, education and planning for its solution. How much longer will the daily sacrifice of a mother and five babies in Philadelphia be permitted for want of proper care during pregnancy, labor and the puerperium?

2206 Locust St.

COMMUNICATIONS

September 17, 1923.

To the Editor of The Atlantic Medical Journal,
Harrisburg, Pa.

Dear Sir: Through the contacts which I made in Sullivan County as Field Organizer, a request has come to our Department of Welfare that a doctor settle in either Estelle or Forksville, where a ready-made practice awaits. The patients, though in moderate financial circumstances, are good pay.

The territory comprises the five western townships and the nearest doctor is miles away.

For further details, anyone interested should write the State Nurse, Miss Mary Berry, Dushore, Sullivan County, Pa.

Yours truly,
Caroline W. Jones,
Field Organizer, Department of Public Welfare,
Harrisburg, Pa.

To the Editor of The Atlantic Medical Journal,
Harrisburg, Pa.

Dear Sir: In continuation of the article by Dr. C. C. Cracraft, in the September issue of your Journal (The County Doctor; What of Him?) I should say his present status and future prospects are gradually diminishing. The Doctor is right in his article, and I prophesy that within twenty years there will be no country doctors as they have been known in the past.

"Why?" you ask.

First: The physician who practices in the ordinary country district cannot make sufficient to support himself and family. Had I no other income than that from my profession, I should be compelled to follow some other occupation. I think I would learn to lay bricks at $18.00 a day!

Second: The tendency of all people who have the price of a railroad fare is to go to a city hospital (and even those who have not the ready money will borrow from friends or the bank to pay the bill), leaving the country doctor to wait for his—or be compelled to resort to process of law, and then possibly never collect. This leaves the doctor with a twofold loss: that of a patient and the patient's relatives and friends, as well as his direct money loss.

Third: There is too much professional competition or jealousy among country doctors. If a consultation is desired, someone from a distance must be called, and under no circumstances your local competitor—unless the patient is too poor to pay anybody. Then, the consultation might be admissible. Noncoöperation among physicians in rural districts has had and will have more to do with the extinction of the country doctor than any other one factor.

Fourth: Incompetence from the fact of not attempting or learning to do the things that every ordinary country doctor should be able to do, is another factor. Dr. D. has a patient with a dislocated shoulder joint. He takes him to the hospital. Mr. H. breaks his leg, and the doctor sends him to the hospital—and many other ordinary things that happen in the course of the year, until the doctor becomes a helpless adjunct of the community, impoverishing not only himself but being the means of depleting the pockets of his patients. I called on a doctor friend a while ago, and he told me that during the last year he had sent twenty cases to the hospital. I inadvertently asked him what he did for a living!

Fifth: Unless the country doctors combine their money for equipment, their brains for advancement, and lay aside their petty jealousies and work together, they must, according to the law of the survival of the fittest, automatically go out of existence.

Yours fraternally,
R. B. Hopkins, M.D.

Milton, Delaware.

A UNIQUE RECORD

To the Editor of The Atlantic Medical Journal,
Harrisburg, Pa.

Dear Sir: On the evening of September 2, 1923, Dr. John D. Sturgeon, Jr., of Uniontown, Pa., presented his application for membership in the Fayette County Medical Society and was at once elected to membership.

This of itself is not of special interest, but when we consider that he is the fourth generation of physicians who have practiced medicine in Fayette County and in Uniontown, it is a record which I doubt can be equaled in any place within the United States.

One hundred and thirteen years ago Dr. Daniel Sturgeon located in Uniontown for the practice of his profession. He later became United States Senator from Pennsylvania. His son, Dr. William H. Sturgeon, followed in the profession and was one of the leading physicians of the county. Dr. William H's son, Dr. John D. Sturgeon, succeeded in the practice and is now one of the leaders of the profession in the city and county. Now we have the son of John D. following in the footsteps of his ancestors and is now associated with his father. Thus we see that Uniontown has had a Dr. Sturgeon for more than a hundred years in a direct line from father to son.

This is a unique record and probably cannot be duplicated at any place within the United States.

J. S. Hackney, Secretary.

WHAT THE U. S. PUBLIC HEALTH SERVICE HAS DONE FOR YOU

PURE MEDICINE

When you or one of your family is ill, you want them to have reliable medicines; and not so many years ago these were not always obtainable, for money-hungry manufacturers did not hesitate to adulterate both drugs and food. Later the national government adopted a pure food and drug law that applied to shipments across state lines; and a number of states adopted similar laws that applied inside their own boundaries; and these together met the evil fairly well. Since then, however, conditions have changed. When these laws were adopted most medicines were chemical substances which were prepared by machinery and whose purity and strength could easily be regulated and readily tested. Of late, however, preventive medicines (vaccines, antitoxins, and serums) have come into great vogue; and the preparation of these and of certain arsenical preparations (such as salvarsan) require great technical skill and knowledge. Moreover, all of them (except the salvarsan group) are obtained through the reactions of animals and their strength varies markedly with the individual animals used. It follows that before these "biological products" can be intelligently administered to a patient they must be standardized—brought to a fixed strength. To do this requires a separate test for every lot produced by a manufacturer.

Some years ago Congress assigned to the Treasury Department operating through Hygienic Laboratory of the Public Health Service the duty of making these tests and of inspecting the factories where these "products" were manufactured. No bacteriological product may be shipped in interstate commerce not bearing the endorsement of the Laboratory. This endorsement is, of course, not as to the medicinal value of the product but is merely as to its strength, toxic properties, and the sanitary conditions under which it is manufactured.

Most states have officially adopted the Public Health Service standards; but some still allow the manufacture within their border of products whose manufacturers are unwilling to submit them for testing or their factories for inspection. Such products may not be shipped from state to state.

The Public Health Service has standardized products for use against diphtheria, lockjaw, dysentery, meningitis, pneumonia, and typhoid.

Within the last 20 years the death rate from diseases now treated by bacteriological products has been enormously reduced. Smallpox, except where vaccination has been neglected, has been almost abolished; meningitis to about one-sixth, and diphtheria to less than one-third; rabies, if taken in time, can almost always be prevented; tetanus has been greatly reduced.

RURAL HEALTH WORK

County-wide rural health work was in progress in 1922 in 56 counties in 16 different states, in each at the request of the state health authorities. In such work the U. S. Public Health Service coöperates with the state and county health organizations and supplies a part of the money; volunteer residents, especially women, do much of the detailed work. In the coöperative projects the sanitary conditions are enormously improved, the dairies are protected against flies and other evils, polluted wells are closed or cleaned and protected against further pollution, the health of the school children is greatly improved and their minor physical defects remedied, infant and maternity hygiene is promoted, and clinics, usually dental, tuberculosis, or venereal disease control are opened.

In Madison County, Ala., when this work was begun, in 1918, the yearly death rate, which for 10 years had averaged 19 per thousand residents, began to drop and reached 12.6 in three years after rural hygiene work was begun. This means that besides an enormous improvement in the general health, the number of residents of the county who now die each year is less by 350 than the number who died each year before rural health work was started.

Similar work has been done in different parts of the United States since 1911; and 105 counties in 24 states have received or are still receiving the benefit of the Public Health Service health system of rural hygiene.

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October, 1923

EDITORIALS

PAPERS FOR MEDICAL MEETINGS

Short papers and sharp discussions should be the rule in the professional part of all medical meetings, not merely as a time-saving system, but as a necessity. It is rarely possible to keep the attention riveted on one topic any great length of time, unless it is one of extreme importance and is attractively presented in pleasing language.

A revolutionary idea must, of course, be supported by detailed facts, and a discovery of new facts may be enlarged upon, but the average paper is likely to be a variation of some well-known idea which needs but little defense. The medical meeting is the place for the exchange of generalizations, experiences and conclusions. The time has long passed when scientific meetings were the only means of publishing the details of scientific work. Medical journalism fulfills this function, and to the great benefit of science, too, for the place where such data can be appreciated is in the quiet of the study rather than in the distraction of a crowd. Often do medical meetings become too tiresome for good thinking, and the recollection of them is a confused, painful jumble; whereas each member should have carried away new, sharply impressed ideas, as derived from short, crisp papers and the healthy discussion which followed. In this way it is possible to gather a crop if ideas which are never suggested by reading.

F. C. H.

THE HOSPITAL'S INJUSTICE TO ITS MEDICAL STAFF

Three decades ago hospitals were almost exclusively occupied in caring for ill and injured persons who were unable to employ paid medical aid commensurate with the probable duration of their convalescence, or to secure such medical or surgical skill as was needed for their early resumption of wage earning. It was therefore proper that doctors should give free professional medical and surgical attention to ward inmates of hospitals. Hospitals at that time made no charge for medicines, nurses or board. The charitable nature of the care given by the unpaid members of the staff was befitting and expected, in these eleemosynary institutions. One's education for a medical career does not harden one's heart or make the mind insusceptible to the woes of the poor, the ill and the hurt.

Gradually a change has taken place in the function of many hospitals. They have become a resort in injury or disease for well-to-do people. Such persons may rent beds, parts of pay wards or single rooms, according to their ability or willingness to pay the hospital's charges for rental, nursing care and laboratory fees. This rapidly increasing custom has turned the American hospital, in many instances, into a creation much resembling the nursing homes of Great Britain.

The nursing home is like a private hospital in America. It is not a corporate charitable institution, but the personal business equipment of one or more practitioners of medicine and surgery; it does not pretend to be doing welfare work, or request donations from individuals or financial aid from the community or the state for overhead expenses. It may be a relatively small building, managed by nonmedical persons, taking sick people as boarders sent there by doctors.

The present dual function of modern American hospitals ought to be recognized by hospital trustees and managers. They should not expect their attending physicians and surgeons to treat, without some pecuniary reward, patients who pay the hospitals for care and treatment. It should make no difference by whom the patient's expenses are paid. The knowledge and skill of the doctor are the essential factors in the situation.

The change in relation of the members of the medical staff to pay patients in private rooms has been pretty generally recognized, but it has been ignored to a great extent in the case of pay patients admitted under the Workmen's Compensation Act of Pennsylvania.

When Pennsylvania enacted a law providing compensation and medical care for employees injured while on duty, a large number of persons accidentally hurt, who would formerly have been admitted as free patients, became paying patients. The money paid for these hospital inmates comes from individual employers, firms, corporations or insurance agencies acting for them. The original act was changed by amendment to secure the right of the doctor to receive remuneration for professional attendance upon "compensation" cases, in addition to any amount which the statute allowed the hospital. The employer, very properly, is permitted to choose the doctor to whom the hurt employee is entrusted. This is in order to secure competent and reliable treatment, and to insure the prompt return of the employee to duty.

Employers and their insurance agencies naturally prefer to have their workers obtain the advantages of hospital care, rather than to be treated in their own homes. The result, however, has been that hospitals receiving compensation cases collect the entire amount paid under the provisions of the law, and expect the members of their medical staffs to treat these cases as if they were free patients or poverty-stricken individuals.

The intention of the amended statute was that the doctor, as well as the hospital, should be paid. It was so understood by the Workmen's Compensation Board and by the Medical Legislative Conference of Pennsylvania.

As often happens in framing laws, the wording of the essential phrase was not clear and interested parties soon secured the interpretation that, if a hospital was selected instead of an individual practitioner of medicine, the hospital could claim the entire amount due, under the law, from the employer. The hospitals have taken advantage of this obscurity in the wording of the statute, and employers and their insurance agencies find no fault with the interpretation.

The Section on Industrial Medicine and Public Health of the College of Physicians of Philadelphia, about two and a half years ago, criticized this unfortunate wording of the Compensation Law and showed the unjust view of its provisions taken by hospital authorities. Since that time there has been considerable discussion between hospital staffs and their executive superiors. The Medical Society of the State of Pennsylvania and the Philadelphia County Medical Society have, within recent months, given the question grave consideration. An effort was made during the session of the Legislature of 1923 to have the phraseology of the law altered, so as to remove its obscurity and make its intended meaning absolutely clear. The parties who benefit by the indefiniteness of the law successfully thwarted the attempt at amendment.

It is useless to spend time trying to convince hospital executives of this injustice to their staffs. The members of the medical profession themselves should show that it is not unreasonable to decline to give unrequited service to pay patients. It is admitted that the compensation act does not always pay hospitals the actual cost of their service to compensation cases, but even so, in common justice, the institution should share the pay with its medical officers.

The remedy for the abuses of the present situation is for surgeons and physicians to organize their own hospitals for pay patients. This form of hospital, financed by its staff, has been successfully carried on in various cities of this country, and the stock of such institutions has paid fair dividends on the money invested.

John B. Roberts.

ARE YOU SLIPPING?

When, as a young graduate, you opened your office, you began the practice of medicine with a feeling that your life work had begun in earnest. You proposed to care for the sick in your community to the best of your ability. You had a thorough training in all the branches of medicine, with sufficient postgraduate experience to give you a feeling of confidence; and with the hope of future success you launched out in this endeavor. You were regular in your prescribing of medicine, writing prescriptions, or if in a community that required it, dispensing only preparations of which you had absolute knowledge. But after a time you began to listen to the advance agent or detail man of the so-called proprietary medicine houses, and it was so much easier to write "Brown's Compound" than it was to prepare a formula for the individual case. Were you slipping?

For many years you were a constant buyer of the latest medical publications on the market, keeping abreast of the times and keeping up your reading. Lately you have been saying to the representatives of the medical publication houses that you have all the books you need. You are not in the market for the new books; but we recall the fact that your last purchase was about eight years ago. Are you slipping?

At the beginning of your medical career your equipment, your surgical instruments and instruments of precision, were the very latest and best you could buy. You did not propose to have any of your competitors, even the older men in your neighborhood, outrival you in having every appliance necessary in your practice. Some of these instruments look quite rusty and ill-used, and we note that you have not recently purchased any of the newer appliances, nor have you kept up the appearance of the older ones which you have had for some years. Are you slipping?

That new office furniture, filing cabinets and bookcases, clean rugs and comfortable chairs have of necessity seen some wear. They are not quite as bright and shiny as in the days of yore, and yet for many years you were proud of your office and reception room. But we are informed by some of those who have called on you recently that your office is not kept up quite as well as it used to be. True, domestic help is scarce and hard to get, but nevertheless the appearance of the doctor's office has much to do with his success in impressing his patients. Are you slipping?

Quite some years ago that fine, high-stepping horse and newly painted buggy showed the evidence of prosperity and pride. Later on you patronized "Henry" and the little old Ford rambled right along. In later years the Ford was probably replaced with a better make of car, but of recent times we note that this needs a coat of paint and more frequent washing than it has received, and that it is not in keeping with a prosperous medical practitioner. Are you slipping?

Years ago we met you at every county society meeting it was possible for you to attend. You were keen to take part in the scientific program and frequently read well-written papers for your society, both county and state. Something must have happened, because of late we are not meeting you as frequently as we did. Your absence has been noted and it is a question whether you have as much interest in medical organization affairs as of yore. Surely the society needs your presence and just as surely needs well-written articles like you used to present. We believe that it is worth while for any man or woman in the practice of medicine to-day to keep up with the times by being interested in what is going on in medical affairs. Are you slipping?

During the past few years something of a disturbing nature has brought about a feeling among the people that the medical profession is not what it used to be. This feeling holds true not only about the general practitioner, but even about the specialists. This is probably the result of a post-war unrest as well as the rapid growth of cults and free thinkers who are not aligned along scientific medical lines; but as a result every medical journal has from time to time brought to the notice of the profession in all parts of this country a greater need of interest in medical affairs by medical men and women.

It is time, therefore, that we realize how important it is for each of us to take our proper place in social and civic affairs and in the affairs of the state and nation which relate to the work we have undertaken. We should not refrain from participating in the various activities that are assumed by others for the purpose of bringing to the attention of the public the fact that we are in business and are anxious for their patronage. Let us take an inventory of our stock and see where we stand. Let us put on our thinking caps and see if it is not possible to present to the people a better front and deliver the proper kind of medical healing that is necessary to keep us in good faith with the general public.

INTERNAL REVENUE RULINGS

The recent suit-at-law, brought by Dr. Samuel Lambert and other noted physicians in New York, which resulted in a decision favoring the protesting physicians with regard to their constitutional right to prescribe alcohol in unlimited quantities, marks a victory for right, justice and common sense. It would seem that the American Medical Association could well spare some of the time spent in discussion of abstruse problems in looking after the welfare of its members and the medical profession in general along this and other lines.

The members of the Pennsylvania House of Delegates who heard Dr. J. Norman Henry, of Philadelphia, at the last Scranton session, will remember that Dr. Henry informed them that many decisions handed down by the Commissioner of Internal Revenue, in Washington, had originated in the minds of very youthful, inexperienced and highly visionary members of his staff, with the result that the modifications in favor of the physician that went into effect in April, 1923, were the direct outcome of the visit of the Committee from the Philadelphia County Medical Society to the Commissioner.

Another unjust ruling of the Internal Revenue Bureau is that a physician may not deduct traveling expenses for attendance at meetings of medical societies, although this ruling is at variance with previous rulings of the Bureau relative to the physician and to other professions.

Just so long as the medical profession submits supinely to such actions, will we find that one ruling after another will be made against our rights. A. C. M.

THE ROAD TO SUBSTANTIAL MEANS

Few physicians accumulate wealth as a result of their medical practice. Some few achieve comfortable circumstances. Many die as they have lived—poor men. But with a reasonable amount of perspicuity this is not usually necessary.

Doubtless there are many reasons why a man may fail to accumulate any sizable protection for a rainy day. He may live in a poor community, he may be charitable to every one but himself, hard luck may pursue him, ill health may cripple him; but we are convinced that the three most frequent reasons are a failure to collect his outstanding accounts, an improvident mode of living and unwise investments.

The man out of luck has our sincere sympathy; for the improvident we can only suggest reform, having in mind the benefit of thrift; the matter of collections we shall have to leave to a later paper; but in continuation of the subject of investments which we started last month, presenting it from a negative point of view, we will this month present the positive viewpoint.

There is only one way to accumulate, and that is to *accumulate*. No one can expect to save any vast amount in a few years. But, as pointed out in a recent advertisment of a substantial bond house appearing in the *Atlantic*, "money doubles in twelve years if invested at 6% with interest compounded." Do your own computing. A small amount saved regularly and invested judiciously will, before many years, grow into a respectable sum.

For the man who finds it difficult to save regularly, life insurance is the best solution of the problem. Among the many fine policies now offered there is sure to be something that will suit your individual needs. These range from the straight life plan; through the ten, twenty or thirty year limited payment life plan; the ten, twenty or thirty year endowment plan; to a number of recently proposed plans whereby you or your beneficiary may receive any amount designated, either in a lump sum or in regular instalments for any number of years, varying from a few years to the remainder of life. For further information we would recommend that you consult the agent of any reputable company. He can tell you the whole story. But be assured, no man can afford to be without some life insurance, either to protect his own old age, or to protect his investments or to protect his family in case he is called away prematurely.

Unfortunately there are some men, who through physical disability, are unable to pass the life insurance examination. For these we would suggest as a substitute, investment in a substantial building and loan association. Another excellent substitute is to purchase a home, even though it is necessary to go considerably into debt to do so. This is particularly important for the young man just starting his professional career, for it helps him to establish the saving habit. While it is never a wise thing to go in debt to buy such things as furniture, clothing, a fine car, etc., it is always good policy to keep in debt for a substantial thing like real estate that is more apt to appreciate than to depreciate. There is no better incentive to saving than the right kind of debt. Many a young man thinks that he must have an expensive car, that he must dress and live so as to give the appearance of prosperity. But he will find it better far, in the long run, to spend his money on the more lasting things, and so achieve real prosperity at the time he can ill do without it—middle and old age.

Once the habit of saving is established it is not apt to be abandoned, and it becomes necessary then to plan for wise investment of the accumulated resources. It is always the safest plan to diversify one's investments, not only as to kind, but also as to locality, but always conservatism should be the keynote. We would, therefore, recommend the following type of investments:

U. S. Government bonds are, of course, the safest type possible to secure, although the interest is necessarily low.

After this, first mortgages on real estate (or first mortgage bonds on the same) would be our choice. However, one must be sure that the mortgagee has a clear title to the property, and that the fire insurance is kept up.

Many of the better class industrial bonds are also very desirable.

Municipal bonds, county and school bonds, are considered first class, if one can be sure there is no flaw in the ordinance authorizing them. Such a flaw has caused the bonds of some first class cities to be repudiated.

Many of the bonds of foreign governments are excellent, but we have the feeling that they should be accepted with great caution, especially during the present unsettled era.

Stocks of established corporations doing business in essentials are by many considered very desirable. One must not forget, however, that purchasing stock means purchasing a share in the profits of the corporation. Consequently: no profits for the corporation, no profits for the purchaser. But when one purchases bonds, these are an obligation, taking precedence over all others, to pay a certain sum of money at a specified time and at a specified rate of interest.

Short term bonds are usually preferable to long term bonds, for the reason that they are more easily converted into cash if this becomes necessary.

Well secured local bonds or bonds that have a rating in the financial markets are usually more salable and hence more desirable than those that do not.

Real estate judiciously purchased, and resold at the right time, is an excellent source of profit. This is usually a safe proposition if the purchase is made in a locality in the direction of growth of population.

It is impossible in this short paper to cover fully the various types of investment. The wide-awake man can usually discover a dozen legitimate and safe types of investment. The difficulty is largely to choose wisely among those obtainable. But this can be done—by personal investigation, but largely by those of us who are not greatly experienced, by consultation with a reputable banker who can be counted on to advise to the best of his ability.

Whatever one's opportunities, we are persuaded that in the long run, the best way for the man who is not a financial genius—for the average man—to accumulate substantial means is to save steadily and persistently, to invest those savings at a low rate of interest, valuing safety above a high percentage of interest, and then to keep on doing more of the same thing. The man who adopts this policy and consistently carries it on, is sure eventually to accumulate more than the rainbow-chaser who invests in every glorious get-rich-quick scheme that comes along.

PIONEER PHYSICIANS OF PENNSYLVANIA

THE LACKAWANNA REGION

In that part of Northeastern Pennsylvania which includes the Lackawanna Valley and the Moosic Mountains with the beautiful Abington Hills beyond, it is generally recognized that its physicians have been its historians.

Here the medicine men of Chief Teedyuscung's tribe or those of the older Capoose Indians crooned the legends of their former greatness over the campfires of their tribal village on the spot where Scranton now stands.

The most authentic history of the settlement of the "Lockaworna Country," up to the time of the formation of Lackawanna County by division from Luzerne, comes from the pen of Dr. Horace Hollister. Dr. Hollister first came to practice in the Valley in 1846. He was an antiquarian by temperament, a collector of Indian relics, and a clever observer of the ways of men in a country in the making. The first edition of Hollister's "History of the Lackawanna Valley" was published in 1857 and went through several later editions. It is now sold at a premium, being out of print.

Dr. Hollister was the student of Dr. Benjamin H. Throop, around whom the medical history of Lackawanna County centers, and who published in his declining years his historical reminiscences entitled "A Half Century in Scranton," these being the memoirs of a man who came to the region when it was still a new country and with shrewdness and ability rose to affluence by taking part in and keeping step with the development of its natural resources.

We note also the part taken by the late Dr. J. Emmet O'Brien in the authorship of Col. Hitchcock's "History of Scranton"; so one may know that the physicians received no slight mention at the hands of these medical historians.

This territory was first explored by the Moravian missionaries in 1742, and long after the lower counties of Pennsylvania were peacefully settled and free from the Indian menace, the country north of the Wyoming Valley was still a wild and unfrequented land. It was indeed a land of mystery, where Indian legend and hunters' exaggerated tales told of game in abundance—which was true enough—and of gold and silver and lead and iron to be found in its hidden mountains, with springs of salt, so much desired, to be easily found in the forest depths—which were only partly true; while no one knew of the wealth of coal which lay hidden in its rock-bound ledges and which then as now showed its black face in occasional outcroppings on glacial and weather-worn hillsides.

It is easy to imagine that the migrating tendency of the people of the Eighteenth Century would lead them to such a land of promise. This however was a "Debatable Land" and often a dark and bloody one as well. Claimed by Connecticut as a Royal grant and by the Quakers as having been obtained by purchase from the rightful owners, for years the warfare kept up by the "Yankees" and the "Pennymites" made living there as dangerous as though the savage Indians were still intent upon keeping for themselves this delectable country.

It was not the fashion of the old pioneering explorers for them to take physicians along with them in their wanderings, nor were there enough of them to be had, but when they settled and brought their women folk and little children, the doctor of some sort soon made his appearance; and so it was here.

It is of interest to relate that the first physician who came into the region professionally was Dr. J. M. Otto, of Bethlehem. In the year 1750 he came a hundred miles through the wilderness to answer the call of Frederick Post, a

Moravian missionary, who while living and teaching among the Indians became seriously ill and sent for him to come to his aid.

As the first settlers were "Yankees" who came from Connecticut, across the Pocono and Moosic Mountains, so the first physician who "settled" was of that roving type and hailed from Hartford.

It appears upon the records of "ye Town of Lockaworna" that Dr. Joseph Sprauge, in the year 1771, settled as one of the "Proprietors," and these records show that he was more active and interested in real estate sales to prospective settlers than in the practice of medicine. He, with the other Yankees, however, were driven from the Valley in 1784 by the Pennymites, when he returned to Hartford and died the same year. His wife returned to Wilkes-Barre some years later, where as "Granny Sprauge," she practiced midwifery and sold medicines of her own manufacture for many years.

In 1772, Dr. Wm. Hooker Smith, being a native of "ye Province of New York" and therefore not a "Yankee," was welcomed as a physician in Wilkes-Barre, where he with the Yankee Dr. Sprauge, for years were the only physicians between Cochecton on the Delaware, and Sunbury on the Susquehanna, a distance of a hundred and fifty miles.

During the Revolution, Dr. Smith was the surgeon with Gen. Sullivan's army, for which service he gained great renown, after which he determined to settle in the Lackawanna Valley and made his home a few miles below Scranton, where in addition to his business he opened an iron forge. This fact remains to-day in the name of the town (Old Forge) which covers the site of his activities. He was one of the first to recognize the possibilities in "stone coal" and the natural resources of the region in which he chose to live. In addition to leaving a reputation for great skill as a physician, he is recorded as having done much to advance the general interests in the community of which he was a member.

The next physician in the order of his coming was Dr. Joseph Davis, a graduate of Yale College, who settled in Slocum's Hollow, now Scranton, in the year 1800. Affairs were not so strenuous in his day as for his predecessors, though he had the trying life of a circuit-riding doctor with long wilderness journeys through a sparsely settled country. Yet with all of this he lived to be ninety-eight years old.

Dr. Silas B. Robinson, another native of New York, started to practice in the year 1823. Having "read medicine" for a number of years with some of the best physicians of his native community, he was awarded a diploma by the Otsego (N. Y.) Medical Society in 1821. Dr. Robinson's skill gained him a large practice over a wide territory, where he was known for his eccentricity as well as ability, he preferring to walk rather than ride to his patients. It is noted that he walked as far as twenty-five miles to confinement cases. This will doubtless afford the average wag some subject matter for philosophical thought. The death of Dr. Robinson occurred in Scranton in 1860, where he is still remembered by some of the older physicians.

Around the year 1835 there was quite an influx of new practitioners, among which were Dr. David Seaver, Dr. Orlo Hamlin, Dr. Hiram Blois and Dr. Joseph Osgood, none of whom stayed more than three years, and so we pass them by.

Dr. Benjamin H. Throop began his practice in the Lackawanna Valley in 1840. He was born in Oxford, N. Y., in 1811, and died in Scranton in 1898.

Dr. Horace Hollister, the historian of whom we have made mention, was the student of Dr. Throop, and came in the year 1846.

Concerning Dr. Throop, we note that he looms largest of all of those who are the subjects of this article, and affords a striking link between the past and the present, in the medical life of Northeastern Pennsylvania. During his lifetime he had known every physician in the county, with the exception of the first three mentioned (Drs. Sprauge, Smith and Davis), up to the year of his death in 1898, a comparatively recent date for many of us now living. He saw Scranton grow from a small hamlet to the third largest city in the state, and having an aptitude for business in general and hearing opportunity when it knocked at his door, he proved himself to be one of the greatest factors in the political development of his city and did not fail to improve with it in a material way for himself, which is not the usual thing to be said about physicians.

Dr. Throop says of his early practice that he "traveled over a circuit of over fifty miles and was seldom sent for except in cases of critical illness." He notes having had to extend credit for his services and that he had to buy his drugs on credit for the same reason. These he usually got from Dr. Thomas Sweet of Carbondale, and frequently had to stand suit because he could not make payment in cash. There was very little money in circulation except local scrip and "shin plasters," and pay had to be taken often in "trade," which fortunately for him, forced him to deal in other commodities than medicine and later led him to an immense fortune.

As a surgeon, he notes being called to attend a man, who had been injured over on the Pocono Mountains, thirty miles away. Finding that the patient had a large abdominal effusion, and having no proper instrument, the doctor was forced to use his "thumb lancet" and "a large goose quill" in the place of a trocar and canula, removing "two pails full of bluish fluid," after which the man made a prompt and happy recovery. Again he was called to Bear Creek, in the mountains east of Wilkes-Barre, in the winter time, where he found a man who had gangrene of both feet as a result of having them frozen. Once more, necessity being the mother of invention, he being without instruments, the family needle and thread with a dull razor and a carpenter's saw afforded the instruments with which he did the double amputation, about which he said: "They were not as handsome operations as I have seen, but the man got well much more speedily than is usual in such cases."

In his later years his philanthropy carried him far afield from his profession, but in a medical way his monument is the first hospital in Scranton, which he organized and largely supported at his own expense.

With Dr. Throop and Dr. Hollister, the antiquarian and historian, there ends the list of the physicians who can be truly considered as pioneers; and with them begins a list of approximately forty physicians who practiced here up to and beyond the year 1860. These men are all gone now, and yet have left their names written deeply in the memories of the old people of the county, who remember them for their deeds at a time when service such as they gave still meant great sacrifice and much loving kindness. It will be but fair to mention a few at least, such as: Dr. Wm. H. Pier; the veteran Dr. Henry Roberts, who but recently died well along in his nineties; Dr. Lewis Van Sickle, the father of Dr. F. L. Van Sickle, the present editor of The Atlantic Medical Journal; Dr. A. Davis, physician and newspaper editor; Dr. W. E. Allen, the famous raconteur, and Dr. J. W. Gibbs of obstetrical fame.

To those of us who are now living these men of the immediately preceding generations seem to be of the pioneer type because they practiced after the fashion of the pioneers, but they blazed no trails through the hardships of the wilderness and belong rather in our day's history.

THE FIRST HOSPITAL

The Lackawanna Hospital was organized in 1871 and had for its first building an abandoned Episcopal Church, with the old rectory as a dispensary. This in later years became a state institution and is now known as the "State Hospital." Its pioneer staff consisted of: Dr. R. A. Squier, Dr. Geo. B. Boyd, Dr. I. F. Everhart, Dr. W. E. Haggerty, Dr. Charles Fisher, Dr. S. P. Reed, Dr. J. E. O'Brien and Dr. P. F. Gunster.

Its first physician, who acted as resident and superintendent, was Dr. L. M. Gates, and the first operations done were said to be "two amputations with ligation of the femoral artery."

MEDICAL SOCIETIES

The Scranton Medical Society: Previous to the formation of Lackawanna from a part of Luzerne County, the physicians of the upper part of old Luzerne, in the year 1855, organized the Scranton Medical Society, and among the organizers are noted: Drs. B. A. Bouton, Augustus Davis, Silas M. Wheeler and G. W. Masser of the Lackawanna Valley, and Dr. W. G. Nugent of Pittston. This society was not an affiliated county organization, and disbanded in 1868.

Luzerne County Medical Society: The first recorded meeting of the Luzerne Society in Scranton, was held on September 11, 1861, and for a number of years meetings were held three times a year, in Wilkes-Barre, Pittston and Scranton. In 1878, owing to the formation of the new county, the meetings in Scranton were discontinued.

Lackawanna County Medical Society: The year 1878 saw the original call for the organization of this Society, occurring in November. By January of 1879 the Society was running and duly affiliated as a part of the Medical Society of the State of Pennsylvania, having as its president Dr. B. H. Throop, who gave it a hundred volumes of medical works as the nucleus of its present large library. The vice-presidents were Drs. C. Burr and G. B. Boyd; the secretary, Dr. E. A. Heermans, and the treasurer, Dr. J. Wilson Gibbs. The list of charter members numbered eighteen. The Society met for its first regular meeting, by invitation, in the offices of Dr. Ludwig Wehlau, in the old Wyoming House, Scranton, January 14, 1879, at 2 o'clock in the afternoon.

Thus, in a rather disjointed manner, is set forth the beginnings of medical activities in the mountains and valleys of the Lackawanna Region. Could space permit, there is a wealth of interesting anecdote and more extended detail that might interest many, but out of consideration for and in fear of the "editorial blue pencil," I bring this narrative to a close.

Wm. Rowland Davies, M.D.

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408 Traders Bank Building, Scranton, Pa.

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg.
Pittsburgh, Pa.

MEDICAL DEFENSE

a. A member sued or threatened with suit for alleged malpractice should at once fill out the application blank, which can be secured from the Councilor for the District or from the Secretary of this Society. The Society will not undertake the defense of any member unless his application is made within seven days after service of summons.

b. Legal procedure requires that an appearance be made in court within thirty days after service of summons.

Chapter 5, Section 11, of the By-Laws.

PERIODIC HEALTH EXAMINATIONS

Apparently the organized medical profession is again confronted by a demand from the public for a service that it is not thoroughly equipped to give.

The value of the periodic physical examination of apparently healthy individuals beyond school age is thoroughly recognized by Capital, as represented by many large employers of labor and by most life insurance companies.

The need for uniformity in the conduct of such examinations is at present met largely by commercialized companies. The opportunity for such examinations without cost is warmly welcomed by the employees and the policyholders of the above mentioned patrons of periodic health examinations.

That we may fully meet this established demand for our assistance "in prolonging and adding to the comfort of life" the following are essential:

1. Conviction that specific reference by physician to patient regarding periodic health examination is entirely ethical.
2. Adoption of uniform examination blank sufficiently comprehensive to form the basis for intelligent advice, future reference, and a fair fee.

CENSORIAL DISTRICT MEETINGS

In the late summer and early fall months, along with the season for county fairs and family reunions, comes the open season for group medical society meetings. This year has apparently been particularly prolific in its production of these delightful and profitable occasions. The Secretary usually receives an invitation to all such meetings and always feels his loss when unable to attend. The combination of a scenic motor trip, a good dinner, an instructive paper or two, and the opportunity to mingle for the day with the best physicians in several Pennsylvania counties is almost irresistible.

We trust that in 1924 the following requirement of Section 1, Chapter III, of our By-Laws will be observed to the letter throughout our nineteen censorial districts:

"Each district shall hold a district meeting at least once every two years for the purpose of increasing acquaintance, good-fellowship and organization among the physicians of the district. Only members of a component medical society in that district shall be eligible to membership or office at such meeting, but all physicians residing in the district who are eligible to membership in a component county medical society shall be invited to the meetings."

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to September 19th:

ALLEGHENY: *New Members*—William R. Marshall, 131 First St., Aspinwall; Frank W. Donley, 1014 Main St., Sharpsburg; William Shapera, Highland Bldg.; J. F. McGrath, 1434 Fifth Ave.; Harold Phillips Hook, 673 Washington Rd.; Edward W. Jew, 2306 Arlington Ave., Pittsburgh.

BEAVER: *New Members*—Charles H. Wilson, New Brighton; Harry C. McCarter, Beaver Falls; Norman R. Crumrine, Beaver; Chester W. Dewalt, Enon Valley.

BERKS: *Transfer*—Max M. Teplitz, from Franklin County Society to State Sanitorium, Hamburg.

CRAWFORD: *Transfer*—Clifford Cooper, Titusville, from Venango County Society.

DAUPHIN: *Removal*—Wilbur P. Rickert from Harrisburg to Derry (Westmoreland County).

Huntingdon: *New Member*—Robert H. Wymer, Riddlesburg (Bedford County). *Removal*—Henry Bley from Hamburg to 652 N. Eleventh St., Reading (Berks County).

Jefferson: *Reinstated Member*—Edgar L. Hughes, Helvetia.

Lackawanna: *Death*—Charles A. Zeller of Dalton (Medico-Chirurgical College of Philadelphia, '96) July 23, aged 50.

Lehigh: *Death*—Charles D. Schaeffer of Allentown (University of Pennsylvania, '89) September 2, aged 59.

Luzerne: *Reinstated Member*—Ira R. Teitsworth, Luzerne. *Death*—Oliver A. Parfitt of Nanticoke (Jefferson Medical College, '15) from pernicious anemia, July 24, aged 43.

Mercer: *New Member*—Joseph S. Knapp, Greenville.

Montgomery: *Death*—George A. Kerling of Pennsburg (Jefferson Medical College, '87), August 17, aged 60.

Philadelphia: *Removal*—Mary M. C. Longdon from Philadelphia to Nirmalendu Tuberculosis Sanatarium, Pendra Rd., C. P., India.

Snyder: *Death*—Charles N. Brosius, Shamokin Dam (Medico-Chirurgical College of Philadelphia, '07) recently, aged 45.

Somerset: *Reinstated Member*—Hugh Morrow, Elk Lick.

Westmoreland: *Removal*—Morgan J. Cramer from Monessen to 201 W. 92nd St., N. Y. *Suspended*—William P. Nolan, Jeannette.

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since August 11th. Figures in first column indicate county society numbers; second column, state society numbers:

Aug. 18	Philadelphia	1925-1944		7233-7252	$100.00
23	Huntingdon	36	(½ year)	7253	2.50
24	Mercer	72	(½ year)	7254	2.50
Sept. 6	Somerset	47		7255	5.00
12	Jefferson	54		7256	5.00
17	Beaver	65-68	(½ year)	7257-7260	10.00
19	Luzerne	235		7261	5.00
	Allegheny	1232-1237	(½ year)	7262-7267	15.00

FREDERICK L. VAN SICKLE, M.D.
Executive Secretary
230 State St., Harrisburg, Pa.

WHAT IS THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA?

Possibly some of you will say "who" rather than "what," but that is not the point. We sometimes doubt if the members have the proper conception of this organization. We sometimes feel that a great percentage of the members are unaware of its real work and the results of that work to the medical fraternity of this state. This condition no doubt holds true with every other state medical society.

We are frequently impressed with the thought that a great percentage of our members look upon the State Society as merely an "annual session"; but we wish to stress the fact that the Medical Society of the State of Pennsylvania is a corporate body functioning throughout the entire year. Many times you have read in this Journal, and in the publications of the county societies, the benefits you obtain for your per capita fee, which you pay to your county society and which is passed on to the State Secretary.

To our minds, it is not what you receive that is of so much importance; it is, how much do you give to organized medicine as represented in the Medical Society of the State of Pennsylvania? Primarily you are one of the stockholders of this organization. You are interested, or should be, in how that stock is cared for by the officers of the organization, whether it is earning the proper dividends, and whether it is quoted in the market as good, fair, medium or bad. It means also that in order to make this stock of intrinsic value, each member of the organization must boost and aid in bringing before the proper element of the people the importance of participating in the ownership of such securities.

It cannot be gainsaid by any one who understands the conditions in the Society at the present time that the membership in a county and state organization is of value. First, it is of value by virtue of what can be received, which fact has been frequently published. But, second, our point is to show to the members of this Society how much there is a need of increased interest in the organization and how much is to be gained by giving of your time and interest to the work of the organization. If you are a member of a county society (which automatically makes you a member of the State Society) you are then in a position to take an active part, if you are so minded; but you have heretofore no doubt left to the officers of your county society and the delegates to the State Society the work which you hope to see done.

It is not possible for every one of the more than 7,300 of our members to hold office in the county or state society, but are you aware of what these officers are doing throughout the entire year? The district censorial meetings, by virtue of a clause in the Constitution and By-Laws, are to be held at least once every two years. These meetings are of as much importance as the county society meetings. Have you been attending them? The Board of Trustees meet four times a year, at which time matters of importance that you wish considered can be brought before them. The Secretary and Executive Secretary of the State Society are on duty throughout the entire year carrying on as best they can for your interests. It is impossible for these officers to know your likes and dislikes, your impressions or your desires unless you express them.

We have outside of the present organization more than 1,000 physicians in Pennsylvania who should be impressed with the need of joining this corporation, taking out a small block of stock and participating in the benefits afforded by such an acquisition. If it were possible to reach personally each member of our State Society we have no doubt that a more active interest could be incited, but inasmuch as we can meet only a few, we must, therefore, appeal to those who read the articles that appear in the Journal.

The Medical Society of the State of Pennsylvania has just finished its seventy-third annual session in the city of Pittsburgh, one of the best, if not the best that has ever been held in its 73 years of existence. Were you there? Did you by your presence add another name to the registration list, thereby showing an interest in what is being done for you by those who have the good of the State Society at heart? We state without fear of contradiction that outside of the national organizations, the scientific program presented in Pittsburgh has not been excelled by any state organization. We believe that the scientific exhibit was worth the price in money and time spent at the annual session. The commercial and educational exhibit has not been excelled at any former session and was a source of much information and interest. The social features extended by the entertaining society were delightful and should not have been missed by any one who could possibly get away from business to attend.

May we not appeal to you who read this article to act as agents for the Medical Society of the State of Pennsylvania in securing new blood for the organization, additional interest in membership, and a more hearty participation in the work that has so many opportunities, were they properly appreciated?

U. S. VETERANS BUREAU

A bitter war is being waged between officials of the U. S. Veterans Bureau and members of "dope" gangs who are living off the war-earned compensation received by disabled ex-service men.

"I have instructed all employees of the U. S. Veterans Bureau to give every assistance to the narcotic forces of the Government in hunting out and running down these arch criminals who thrive on the blood and strength of their fellow men" said General Frank T. Hines, director of the U. S. Veterans Bureau today in disclosing the recent results of the Bureau's war on dope peddlers and dealers.

During the last forty days more dope peddlers and dealers have been apprehended in the San Francisco District than during the previous six months, "thanks to the coöperation of the officials of the 12th District of the U. S. Veterans Bureau," declared Harry D. Smith, narcotic agent in charge of the California district.

Since the opening of the drive in August thirty-five peddlers, including four dealers, and over $12,000 worth of morphin, cocain and heroin have found their way into the net of the Government forces in the San Francisco District. One dealer has been sentenced to seven years on McNeil's Island and two peddlers have received lesser sentences. Thirty-seven cases are now on the docket with the dopsters either in jail or out on heavy bonds ranging from $5,000 to $15,000.

The medical personnel of the U. S. Veterans Bureau, working in veterans' hospitals, throughout the country, to restore health to the shattered bodies and minds of America's disabled former service men, have long realized that among their most deadly foes were those who sold pain-deadening but body-wrecking narcotics to the patients. There is probably no hospital in the country but has had its parasitic gang of dope peddlers and dealers.

It is an admitted fact among the medical profession that months of good medical treatment can be destroyed in a single day's contact by a patient with dope or liquor. To succeed in the battle for health necessitates the eradication of these outside damaging forces.

It is with this end in view that the Veterans Bureau officials, not themselves under any duty to act as assistants to the federal narcotic and prohibition forces, have undertaken to aid in the fight.

Major Louis T. Grant, Manager of the 12th District, U. S. Veterans Bureau, stated that "a moral obligation rests upon the officials of the U. S. Veterans Bureau to protect ex-service people from the ravages of the dope habit regardless of whether they are in government hospitals, receiving vocational training, or receiving compensation. It is our business to see that assistance provided by the tax-payer for disabled veterans is not appropriated by drug peddlers" he declared.

BUBBLES

THE HARASSED

Vacation time is gone and past,
Our pleasured time has fled too fast,
With joys too great on earth to last,
Mid scenery immense and vast.

Our piled-up work we view aghast;
But soon more dough we'll have amassed,
And then our happy lot we'll cast
Where work and care our joys can't blast.

Will the development of endocrinology start the hen-medics to crowing?

In a certain city of the U. S. A. there is a block entirely inhabited by doctors; and the row starts with Dr. Ague and ends with Dr. Coffin. Honest, it does. No joking.

To hyphenate or not to hyphenate—that is the question. Is it better to commit hyphenation where it ought to be omitted, or to omit it where it ought to be committed?

It's a wonder that someone doesn't advocate a diet of grass for insanity, since Nebuchadnezzar ate grass and recovered.

They say we are what we eat. Does that explain the development of the modern "chicken"?

COUNTY MEDICAL SOCIETIES

Adams—James P. Dalbey, M.D., Gettysburg.
Allegheny—Lester Hollander, M.D., Pittsburgh.
Armstrong—Jay B. F. Wyant, M.D., Kittanning.
Beaver—Francis H. McCaskey, M.D., Rochester.
Bedford—N. A. Timmons, M.D., Bedford.
Berks—Clara Shetter-Keiser, M.D., Reading.
Blair—James S. Taylor, M.D., Altoona.
Bradford—Stanley D. Conklin, M.D., Sayre.
Bucks—Anthony F. Myers, M.D., Blooming Glen.
Butler—L. Leo Doane, M.D., Butler.
Cambria—Joseph J. Meyer, M.D., Johnstown.
Carbon—Jacob A. Trexler, M.D., Lehighton.
Center—James L. Seibert, M.D., Bellefonte.
Chester—Henry Pleasants, Jr., M.D., West Chester.
Clarion—H. A. Wick, M.D., New Bethlehem.
Clearfield—W. E. Reiley, M.D., Clearfield.
Clinton—Clair B. Kirk, M.D., Mill Hall.
Columbia—C. B. Yost, M.D., Bloomsburg.
Crawford—Cornelius C. Laffer, M.D., Meadville.
Cumberland—Calvin R. Rickenbaugh, M.D., Carlisle.
Dauphin—W. Minster Kunkel, M.D., Harrisburg.
Delaware—George B. Sickel, M.D., Chester.
Elk—Joseph E. Madara, M.D., St. Marys.
Erie—Anna M. Schrade, M.D., Erie.
Fayette—Hugh Ralston, M.D., Uniontown.
Franklin—Samuel D. Shull, M.D., Chambersburg.
Greene—Thomas B. Hill, M.D., Waynesburg.
Huntingdon—John M. Keichline, Jr., M.D., Huntingdon.
Indiana—H. Boydston Smith, M.D., Blairsville.
Jefferson—W. A. Hill, M.D., Reynoldsville.
Juniata—W. H. Banks, M.D., Mifflintown.
Lackawanna—G. A. Clark, M.D., Scranton.
Lancaster—J. Sullivan, M.D., Lancaster.
Lawrence—William A. Womer, M.D., New Castle.
Lebanon—W. Horace Means, M.D., Lebanon.
Lehigh—Willard C. Masonheimer, M.D., Allentown.
Luzerne—H. Irvin Evans, M.D., Ashley.
Lycoming—Wesley F. Kunkle, M.D., Williamsport.
McKean—Francis DeCaria, M.D., Bradford.
Mercer—M. Edith MacBride, M.D., Sharon.
Mifflin—F. A. Rupp, M.D., Lewistown.
Monroe—Charles S. Flagler, M.D., Stroudsburg.
Montgomery—John C. Simpson, M.D., Norristown.
Montour—John H. Sandel, M.D., Danville.
Northampton—Wm. A. Finady, M.D., Bethlehem.
Northumberland—Charles H. Swenk, M.D., Sunbury.
Perry—A. R. Johnson, M.D., New Bloomfield.
Philadelphia—Franklin M. Crispin, Philadelphia.
Potter—Ross H. Jones, M.D., Coudersport.
Schuylkill—Arthur B. Fleming, M.D., Tamaqua.
Snyder—John O. Wagner, M.D., Beaver Springs.
Somerset—H. Clay McKinley, M.D., Meyersdale.
Sullivan—P. G. Biddle, M.D., Dushore.
Susquehanna—Robert B. Mackey, M.D., Montrose.
Tioga—H. A. Vosburg, M.D., Arnot.
Union—Oliver W. H. Glover, M.D., Laurelton.
Venango—John F. Davis, M.D., Oil City.
Warren—M. V. Ball, M.D., Warren.
Washington—Charles C. Cracraft, M.D., Claysville.
Wayne—Hugh Stevenson, III, M.D., Honesdale.
Westmoreland—D. Allison Walker, M.D., South West.
Wyoming—Herbert L. McKown, M.D., Tunkhannock.
York—Maurice C. Wentz, M.D., York.

October, 1923

COUNTY SOCIETY REPORTS

FOURTH CENSORIAL DISTRICT—AUGUST

The twentieth annual reunion of the members of the Fourth Censorial District, comprising the Societies of Lancaster, Dauphin and Lebanon Counties, was held at the Lebanon Country Club, on Tuesday, August 14th.

Luncheon was served at twelve o'clock and was followed by a business meeting. Dr. Joseph Saylor, Philadelphia, then gave a very interesting and illuminating talk on Myocardial Degeneration, which was listened to with a great deal of interest by all.

The afternoon was devoted to golf, tennis and cards and at five o'clock the members enjoyed a tempting dinner. Dr. Van Sickle, Executive Secretary of the State Medical Society, responded with a short speech, carrying a message on the State Society and an invitation to the Pittsburgh meeting. Dr. Hugh Hamilton read several poems of his own composition.

About ninety members and their wives were present and enjoyed the day thoroughly.

W. H. Means, M.D., Secretary.

DAUPHIN—SEPTEMBER

The regular monthly meetings of the Dauphin County Medical Society were resumed September 4th. Dr. Harvey Smith, of Harrisburg, the speaker of the evening presented a paper on the subject of surgery and radium in the treatment of uterine hemorrhage. His observations were limited to bleeding caused by benign changes in the mucosa of the cervix or body of the uterus, by fibroid tumors and by malignant growths, and were drawn from 150 cases coming under his personal observation within the past two years. The following is an outline of his conclusions on the relative value of radium and surgery in the treatment of these three types of cases:

1—Hemorrhages caused by benign changes in mucosa of the cervix or body of the uterus, commonly classified as chronic metritis, uterine fibrosis, or essential myopathic hemorrhage. Indications for the use of:

(a) Radium: Practically all cases in which tumors or tubo-ovarian disease have been ruled out, and when glandular therapy and other medical treatment have failed to relieve.

(b) Surgery: When these contraindications exist—a very small per cent—hysterectomy is the only successful method of dealing with these cases.

Successful treatment with radium implies the production of an artificial menopause, which is accomplished by one or two treatments in more than 90% of the cases.

2—Fibroid tumors. Indications for the use of:

(a) Radium: Severe anemia; intramural fibroids—not larger than 3 or 4 months' pregnancy—uncomplicated by tubo-ovarian affection, pressure pains, or intestinal adhesions occurring in the patients near menopause, poor surgical risks, and preparatory to surgery.

(b) Surgery: Patients under 35 when myomectomy is thought possible.

3—Malignant growths (66 cases out of 150 studied). Indications for use of:

(a) Radium: Moderately advanced cases with the possibility of subsequent surgical interference, and severe hemorrhages in far advanced cases.

(b) Surgery: Early cases, which unfortunately comprise but a small per cent, used in conjunction with radium.

In conclusion: It is generally recognized that in the treatment of benign as well as malignant pathology of the pelvis, radium is "not a competitor, but an adjunct to surgery." In nonmalignant conditions, successful radium treatment depends upon a wise selection of cases. This presupposes skill in abdominal diagnosis and ability to visualize certain pelvic pathology, which when present is possible of development into serious sequelæ, such as septic infection, pelvic peritonitis, and local radium necrosis. The absence of a careful and accurate diagnosis before radium treatment is instituted has been responsible for many pelvic catastrophes.

W. M. Kunkel, M.D., Reporter

ELK—APRIL-MAY-JUNE

The April meeting was held at St. Mary's at the Andrew Kaul Memorial Hospital. The society was entertained at dinner at the hospital. As usual when we have "eats" we had a good turnout, and those who could eat sure did enjoy themselves, and were more than repaid for their trip. After dinner Dr. Shaw read a paper on goiter, dealing more particularly with surgical goiter. Discussion was opened by Dr. Logan. It was finally agreed that all so-called goiter cases required very close study by all the means at our command, with the close coöperation of surgeon, internist, x-ray man, and last but not least, the family doctor.

The May meeting at Johnsonburg was a frost. Too much to eat in April!

The June meeting at Ridgway was not much if any better than April. In the absence of anything better the reporter gave his impressions of Rochester, Minn., where he had been operated upon for the third time for duodenal ulcer. The reporter has some very pronounced convictions about duodenal ulcer, among which is that in the comparatively recent cases, the fellow with duodenal ulcer is entitled to prolonged, intelligent, and if necessary, repeated medical care. He believes that surgery is not the method of choice, and that where surgery is indicated, there must be certain well defined conditions present. The reporter fell into the surgical class, but there are not as many cases that require a plumbing job done, as our enthusiastic surgical friends of the younger generation would have us think. Samuel G. Logan, Reporter.

ERIE—SEPTEMBER

The Erie County Medical Society met September 4th, at the Academy High School. Dr. G. William Schlindwein entertained the Society and its friends by showing lantern slides of the places of interest he had visited during his recent travel in South America.

Anna M. Schrade, M.D., Reporter.

FAYETTE—SEPTEMBER

In January, 1922, at a regular meeting of the Fayette County Medical Society it was resolved that the society should have prepared a history of the society and also a medical biography of every physician who had ever practiced medicine within the county and to procure so far as possible a photograph of each and every one and have them incorporated within the history, and when completed have the data so compiled published in book form.

Dr. Jacob S. Hackney, of Uniontown, was appointed a committee of one to compile and edit the work so outlined.

At the meeting of the society on September 3, 1923, Dr. Hackney reported the work completed and presented it to the society. The work consists of over three hundred pages of typewritten copy and one hundred and fifty photographs, some of which are of physicians of over a hundred years ago. The work is now in the hands of the printer and will be circulated among the profession of the county.

In token of the appreciation of the society for the work done, Dr. James B. Ewing, the oldest practitioner of the county, offered the following resolutions, which were unanimously adopted:

Whereas, Dr. J. S. Hackney has prepared and presented to this society a history containing the names and personality of each and all the physicians who have practiced and are now practicing in Fayette County; therefore, be it

Resolved, That his book be accepted with the thanks of the society, and as a further mark of appreciation of Dr. Hackney's good work, be it

Resolved, That he be made a life member of the Fayette County Medical Society with all the rights and privileges of the society, without the payment of any dues or assessments required by this society or of the State Society. And be it further

Resolved, That these resolutions be transcribed in the minutes of the society and also be inserted as the closing paragraph of the history.

H. E. Ralston, Reporter.

WARREN—JUNE-JULY-AUGUST

The June meeting of our Society was addressed by Dr. Russell of Buffalo, who presented his experiences with insulin. He described its manufacture and told of the dangers attending its use.

Resolutions relating to the death of the former president of our Society, Dr. W. M. Baker, were read and adopted.

Dr. Knapp, acting as host, then entertained fifteen members at dinner at the Elks' Club.

The July meeting was postponed because of an invitation extended to us by Crawford County to meet with them at Titusville, which was accepted by only four of our members.

The meeting was devoted to some phases of tuberculosis and was addressed by Dr. Funk of Philadelphia.

The August meeting was held on the 20th in Warren at the Conewango Club, and Dr. L. H. Landon, of Pittsburgh, read a short paper on "Management of Trauma of the Skull." He spoke of the necessity of prolonged rest and cautious prognosis in apparently trivial cases. The brain may be injured much oftener than is supposed, and late symptoms arise. He demonstrated the spinal fluid manometer and urged its more frequent use in determining cerebral or intracranial pressure and advocated early decompression when pressure symptoms showed themselves. Fractures of the skull have grown more numerous (about 10% of all fractures in his service at the West Penn Hospital) with the advent of automobile accidents.

Seventeen members attended and were provided with a chicken dinner by Dr. Haines.

M. V. Ball, M.D., Reporter.

PENNSYLVANIA NEWS ITEMS

DEATHS

Dr. Elmer E. Evans, of Lititz, aged 61 years, died on August 2d. He was a graduate of the University of Pennsylvania School of Medicine, Philadelphia, class of 1885.

Dr. William Henry Fritts, of Philadelphia, aged 64 years, died on July 22d. Dr. Fritts was graduated from Bennett College of Eclectic Medicine and Surgery, Chicago, in 1881.

Dr. Oliver A. Parfitt, of Nanticoke, who was graduated from Jefferson Medical College of Philadelphia in 1915, died on July 24th, of pernicious anemia. He was 43 years old.

Dr. G. A. Smith, of Liberty, died on September 2d, at the age of 74 years. He was a graduate of Jefferson Medical College, Philadelphia, class of 1873, and was a practicing physician for fifty years.

Dr. Austin J. Minor, of Mauch Chunk, aged 33 years, died suddenly on September 14th following an attack of acute indigestion. Dr. Minor was graduated from Jefferson Medical College of Philadelphia in 1918.

Dr. Charles C. Britt, of Philadelphia, who was graduated from Jefferson Medical College of Philadelphia in 1902 and who served for more than eighteen years as police surgeon, died of pneumonia on July 21st, aged 45 years.

Dr. Thomas Marlin Kelly, of Philadelphia, who served in the M. C., U. S. Navy, during the World War, died on August 27th, aged 46 years. Dr. Kelly was graduated from the Baltimore (Md.) University School of Medicine in 1904.

Dr. Sarah Elizabeth Coker, of Gladwyne, formerly of Santa Fe, N. M., aged 42 years, died on July 28th from the effects of poison, presumably self-administered. She was graduated from the Woman's Medical College of Pennsylvania, Philadelphia, in 1908.

Dr. Ella D. Goff, of Bellevue, who was graduated from the Boston University School of Medicine, Boston, Mass., in 1891, died on August 3d, aged 55 years. Dr. Goff was treasurer of the Homeopathic Medical Society of Pennsylvania for eighteen years.

Dr. Clarence E. Brent, of Philadelphia, formerly of Savannah, Ga., aged 38 years, died on July 28th. Dr. Brent was graduated from Howard University School of Medicine, Washington, D. C., in 1910. At the time of his death he was on the staff of the Mercy Hospital.

Dr. Andrew Todd McClintock, of Wilkes-Barre, a specialist in internal medicine, died on August 4th following an operation for colitis. He was 38 years old. Dr. McClintock was a graduate of the University of Pennsylvania School of Medicine, Philadelphia, class of 1911.

Dr. Elbridge H. Gerry, of Shrewsbury, York County's oldest physician, died on September 14th of cerebral hemorrhage. He was aged 86 years. Dr. Gerry was graduated from the University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, Md., in 1867.

Russel I. Klopp, aged 22, son of Dr. Henry I. Klopp, superintendent of the Allentown State Homeopathic Hospital, at Rittersville, was drowned on September 2d, when the canoe in which he was paddling upset, throwing him into the water. He was unable to swim and drowned before his friends could rescue him.

Dr. F. G. Elliott, of Mansfield, a pioneer in the practice of medicine, died on the evening of his seventy-third birthday, September 6th. He was graduated from the University of Vermont College of Medicine, Burlington, Vt., 1889, and practiced his profession since that time with much success until seven years ago, when he was forced to retire, following a breakdown from overwork.

Colonel Edward Ryan, internationally known Red Cross worker and a native of Scranton, died at Teheran, Persia, on September, 12, of malaria. Colonel Ryan was decorated by many countries for his gallantry as head of the Red Cross while working among stricken people. During the World War he served with the Red Cross overseas. He was about 41 years old, and was a baseball player and physician in Scranton before he took up Red Cross work. He is survived by one sister, Mrs. Henry V. Lawler, of Jessup, Pa.

Dr. James Kelly Young, of Philadelphia, who was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1883, died at Beach Haven, N. J., on August 28th, aged 61 years. Dr. Young was assistant demonstrator of surgery, 1886-1892, lecturer and associate professor of orthopedic surgery at his alma mater and professor of orthopedics at the Graduate School of Medicine of the University of Pennsylvania at the time of his death. He was a member of the American Orthopedic Association, the Philadelphia Academy of Surgery, the Philadelphia Pediatric Society, and the Philadelphia College of Physicians. He was also on the staffs of the Women's Hospital and the Philadelphia Lying-In-Charity Hospital.

Dr. Edward A. Krusen, 63 years old, of Norristown, was found dead in his room at a hotel Thursday morning, September 20th, at Johnstown, where he was attending the annual conference of the Pennsylvania State Homeopathic Society, of which he was a prominent member. Dr. Krusen was president of the State Homeopathic Medical Society for several years, and has been serving as Secretary of the Medical Legislative Conference of Pennsylvania. He was graduated from Hahnemann Medical College and Hospital of Philadelphia in 1887. Following his graduation he practiced in Collegeville until fifteen years ago, when he moved to Norristown, where he has been conducting a private hospital with his two sons, Drs. Francis and Carrell Krusen. Surviving him are a widow, Mrs. Anna Carrel Krusen, the two sons, a brother and a sister.

Dr. Charles David Schaeffer, of Allentown, formerly mayor of that city, died on September 2d following an illness of twenty weeks. Since his return to this country from Buenos Ayres, South America, where he was chairman at the International Convention of Surgeons, Dr. Schaeffer was seriously ill. Aboard ship he was attacked with intestinal poisoning and two days after reaching New York he contracted a severe attack of pneumonia. The weakened condition of his heart, brought on by years of overwork, resulted in a general breakdown and he died from dropsy. Dr. Schaeffer was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1889, and for a number of years following his graduation was president of the board of health of Allentown. He was one of the organizers of the Allentown Hospital and later became its surgeon-in-chief. He was also a member of the American Roentgen Ray Society, the American College of Surgeons and the American Medical Association. He was medical examiner for the following life insurance companies: Penn Mutual, Scranton Life, Fidelity of Philadelphia and the Pittsburgh Mutual Life.

BIRTHS

Born to Dr. and Mrs. J. B. Nutt, of Williamsport, July 30th, a daughter who has been named Emily Jane.

Born to Dr. and Mrs. J. W. Mann, at the Private Hospital, Williamsport, August 7th, a son, James Packard.

Congratulations are being extended to Dr. and Mrs. Ammon G. Kershner, of Norristown, on the arrival of a baby girl, August 21st.

Dr. and Mrs. R. Vincent Wolfe, of Norristown, are being congratulated upon the arrival of a little girl in their family recently.

MARRIAGES

Dr. Charles Harkness Willets and Miss Ethel Armstrong, both of Philadelphia, were married in New York on July 21st.

Dr. Adolph A. Walkling, of Philadelphia, and Miss Marian Ware, of Salem, N. J., were united in marriage on August 11th.

On August 9th Miss Charlotte W. Lachlan, of Philadelphia, became the bride of Dr. Aubrey B. Webster, also of that city.

Dr. Edward Pierce Lentz Shope, formerly of Harrisburg, now of Mendham, N. J., and Miss Elizabeth Louise Healy were married at Narberth on September 8th.

The Marriage of Miss Marietta Wagg Holton, of Pedrickstown, N. J., to Dr. Elwood Wakefield Stetzel, son of Dr. and Mrs. J. Wakefield Stetzel, of Hollidaysburg, took place on Wednesday, September 26th.

On August 16th Miss Eleanor Reeder, of Muncy, became the bride of Dr. Harold F. Baker, also of Muncy. Dr. and Mrs. Baker have now returned from an extensive wedding trip and are "at home" to their many friends.

ITEMS

Dr. Edgar C. Hawkins, formerly of Stewardstown, is now practicing in Bendersville.

Dr. and Mrs. J. A. Campbell, of Williamsport, recently visited Chicago and the Great Lakes.

Dr. M. E. Baback has returned to his home in Johnstown after a two months' vacation in Europe.

Dr. and Mrs. Henry Linn Bassett and daughter Juliet, of Yardley, spent the first half of August in Maine.

Dr. and Mrs. Chas. E. Allison, of Williamsport, returned September 14th after an extended motor trip to Canada.

Dr. John Edward Book, of Harrisburg, has removed to Newport, where he has taken up residence in the First National Bank Building apartments.

Dr. and Mrs. Charles B. Smith, of Newtown, recently returned from an extended vacation spent in Minnesota, and later a trip along the Pacific coast.

Dr. and Mrs. L. E. Langley, of Williamsport, recently took an extended vacation trip to Erie, Buffalo, Niagara Falls, Toronto, Thousand Islands and Atlantic City.

Dr. Lydia Allen DeVilbiss has accepted the Chair of Public Health Administration of the Woman's Medical College of Pennsylvania, coming from the Public Health Service at Washington.

Dr. and Mrs. A. F. Hardt and son, Carl Hardt, of Williamsport, returned to their home recently after a two weeks' motor trip to Montreal and Quebec. They also spent several days at York Harbor, Maine.

Dr. T. E. Mendenhall, of Johnstown, in company with Dr. W. H. Kirk, of Pittsburgh, has gone to British Columbia. They intend to hunt grizzly bears in the Rocky Mountains and will be gone for about three months.

Dr. and Mrs. E. B. Shaul, of Scranton, enjoyed a pleasant two weeks' vacation trip by auto to Montreal by way of New York City and the Hudson River, returning by the St. Lawrence River and central New York.

Dr. Louis Hamman, Assistant Professor of Clinical Medicine, Johns Hopkins University, delivered an address on "Clinical Symptoms on Occlusion of Branches of the Coronary Artery" at the regular meeting of the Lackawanna County Medical Society, held Tuesday evening, September 4th.

Dr. J. Clinton Boyer, of Philadelphia, is being held under $5,000 bail after an architect testified that he had been made a drug addict through the physician's treatment. Dr. Boyer also has been accused of administering habit-forming drugs to other patients. Narcotic drugs valued at $10,000 were seized in his office.

The annual meeting of the Central Pennsylvania Medical Association was held on Thursday, September 13th, in Tyrone. Dr. Chevalier Jackson of Jefferson Medical College spoke on Bronchoscopic and Esophagoscopic cases of general medical and surgical interest, and gave a lantern demonstration in connection therewith. Dr. Lawrence Litchfield, the president of the State Society, was also on the program.

Dr. W. J. Bransfield, well-known Philadelphia surgeon, with an unusual war record, has been appointed Clinical Professor of Surgery at the Woman's Medical College of Pennsylvania, and a member of the Surgical staff at the Hospital of the College, according to an announcement made recently at the College. Dr. Bransfield, a graduate of Wesleyan University and the University of Pennsylvania, is also on the Surgical staffs of St. Agnes and St. Vincents Hospitals. He was formerly Medical Director at St. Agnes Hospital, and is now Chairman of the Advisory Board there.

GENERAL NEWS ITEMS

The Tri-State District Medical Association, comprising the entire states of Iowa, Illinois, Wisconsin and Minnesota, and districts of surrounding states, has announced its coming annual assembly, which is to be held at Des Moines, Iowa, October 29, 30, 31 and November 1, with headquarters at the Fort Des Moines Hotel. This association is a purely postgraduate organization, and the entire time of the annual assembly is taken up with scientific study. They extend a cordial invitation to the members of this Society to attend and take part in the program. Many eminent members of the profession have accepted places on the program.

"THE LAY OF AN IDLE DOC"

Oh, for the wail of a colicky babe,
The touch of a feverish hand,
The sound of a cry from a bed of pain,
The sight of a swollen gland.
Oh, for the blissful days of the past
When patients flocked to my side,
The happy days of long ago,
When doctors lived and thrived.

Desk and varnish are parted friends,
My feet have worn them so;
I'm weary of pacing the carpeted floor,
An hour and a half to go.
The ring of the bell, I spring to my chair,
A salesman enters the door;
My heart is heavy, my pocket light,
I yearn for the days of yore.

Jane Semple.

59 Grant Ave., Etna, Pa.

THE

MEDICAL SOCIETY OF DELAWARE

ADDRESS

THE ORGANIC BASIS OF THE PSYCHOSIS*

D. J. McCARTHY, M.D.
PHILADELPHIA, PA.

(Concluded from the September JOURNAL)

ALTERED BLOOD-PRESSURE AND ITS RELATION TO IMBALANCE

If we make a study of this disease, it entails a consideration of the so-called functional group of mental diseases, and we will find here that we are dealing with a machine damaged by age, or infections, or abuse; that a condition exists in which there is either an inherent lack of nerve reserve, or where some condition has existed in one of the critical as differentiated from the fundamental age periods, that has led to some damage to the nervous mechanism, or has acted as a continuing nervous drag, absorbing nervous energy that is so necessary for carrying on the purely vegetative functions of the organism.

The physician often fails to recognize that an organ does not function automatically, but that it needs a nervous control mechanism, and that the potential, the charge of the battery, so to speak, must be kept above a certain level in the battery if the function of the organ is to be kept up to a normal. He fails too often to recognize the added importance of this nervous reserve level when organic disease is present.

If our war experience, medicine en masse, taught us any one thing, it was this: that fatigue and exhaustion, nerve exhaustion, if you will, were very patent factors in the production of diseased or incapacitating conditions affecting the heart, the lungs, the gastro-intestinal tract and other organs. Too frequently in this country, we met cases in the camps where a deficient machine refused to function because its nerve reserve was too low, and functional heart and gastro-intestinal disorders were a fairly large class demanding attention in our camp hospitals. In the selected group that was sent to France, we were dealing with relatively good machines, but physical and nervous exhaustion factors produced a somewhat similar group of cases. I am not dealing here with shell-shock, so-called, but cases admitted to a general medical service in a base hospital. Here again we might differentiate that individual group produced by actual shell fire, and the exhaustive group produced by the exhaustion of the "march" in from the old line to the Rhine.

When we begin to apply the theory of a functional nerve reserve to the diseases of civil life, we are met with the same problem as in the army. Why does this machine fail to function properly under stress and strain when examination gives no evidence of organic disease, or at least no such organic disease as the clinician is accustomed to diagnose as pathological. The range of disabling function extends from simple exhaustion without other clinical symptoms to support it, to tachycardia, dyspnea on exertion, typical neurasthenia syndromes, and the insanities. To take the grosser cases, why, in a group of ten physically fit men in long marches, does one show mental symptoms, whereas the others show a simple exhaustion, recuperated from after a few days rest?

In order to understand this, we not only survey the machine from its physical capacity for the work in front of it, but attempt to estimate its nerve reserve. It goes without saying, that a man of 150 pounds weight, who carries, day after day, from twenty to thirty miles, a pack varying from forty to sixty pounds, is going to suffer more from exhaustion than a man who weighs 170 to 180 pounds, carrying the same load. A man who smokes fifty cigarettes in a day is going to show more nerve symptoms in reference to his heart and circulation than one of equal weight who is moderate in the use of tobacco. A man who starts out on such a test with a low blood-pressure to which are added the other factors, is going to show more symptoms than the other groups. This refers equally to focal infections and especially focal infections acting on individuals with low blood-pressure; the results as to nervous and mental diseases are more evident and serious.

Almost uniformly, when dealing with functionally deficient individuals, those who gave bad reactions to stress conditions, upon inspection gave the first clue to the real deficient as differentiated from the malingerer. The open air life in the army gave to the normal, infection free individual a ruddy, healthy glow. A washed out individual of poor color, with relaxed skin and muscles, had some actual disease or functional inefficiency of his viscera. It was the clue to some damage to the machine; in other words we were dealing with a potentially if not actually sick individual. A further study revealed as a rule, the underlying condition. This might be organic, a latent tuberculosis, a focal infection, or it might be a functional derangement of heart, liver or kidneys.

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* Read before the Medical Society of Delaware, Dover, October 10, 1922.

It is with this latter group that we are mainly concerned. Whether in dealing with pseudogas cases, or sequelæ from mild gassing, incipient pulmonary diseases following gas or the flu, transient albuminuria, nervous exhaustion groups, or mental diseases, we were compelled, in order to arrive at a proper estimate of the case, to determine the functional capacity of the organ involved and the machine as a whole. If the machine were a poor machine, damaged in the making, or by recent experiences functionally inefficient, and with a low blood-pressure, it were best to recognize this and ship the man home rather than send him back to the line where he would break again from some new experience. In dealing with visceral inefficiency, we were led to conclusions along similar lines.

The army was a physical, nervous, and mental test of a well-balanced machine. In the estimation of the functional value of the machine, it will be seen that we are dealing not only with the normal constitution, but equally so with subsequent changes. In order, therefore, to understand any of the functional, and certainly the mental derangements of the adolescent, or the menopause or involutional period, it is necessary to study not only the patient, but to go back and study his life history, the diseases he has had, the experiences he has passed through, and their effect on him.

After the birth period, the mental, brain and nervous development is very rapid up to the fourth year. This, in many ways, is a critical period. It is the period in which the crawling quadruped is stood on his hind legs, so to speak placed on his feet. Up to the adolescent period, the natural growth and adjustment is more or less automatic. We then have the second critical period, that of adolescence. After adolescence is passed, the machine again is stationary and resistant to disease up to the involutional period, when a period of decline of function and a progressive lessening of resistance takes place.

The period of greatest danger from damage to the machine is in the first or post-birth period. Next to this is the period of growth and preparation for the adolescent period, and finally the results of secondary changes at the period of involution, i. e., the menopause.

The balancing factors in the prenatal and postnatal periods are the glands of internal secretions; the so-called endocrine system. It is, I think, admitted that any fault in any one of the important endocrine glandular structures, leads to an essential fault in the blood-pressure mechanism; and any fault here leads to serious damage to the developing brain and nervous system. A statistical study, that of Barr, shows, for example, that tuberculosis in the parents is one of the important factors in the production of imbecility. In dealing with tuberculosis we are dealing with a disease that has a fairly constant action in depressing the arterial tension. It is the one great constant causative factor in producing hypotension. It will serve, therefore, as the best example of a chronic infection in the postnatal period in its action on the developing machine, and the continuing effect that can be followed through the life history of the individual. Tuberculosis is in many ways better than syphilis to study, inasmuch as the primary infection occurs at an earlier period, and its secondary manifestations reach their maximum of importance at the adolescent period.

An infection of tuberculosis in infancy will run its course, as a rule, over several months; not infrequently it is a matter of two or three years before the system is entirely free from the infection, i. e., until the case is cured and the lesion healed. During this period of time several conditions are established that have a marked influence in the life history of the individual affected.

(a) In the first place the general health is seriously involved; a lack of normal general vigor is the rule. The child fails to gain in weight, the general nervous reserves are seriously affected and a disturbance of function of all the organs leads to a faulty nutrition of the brain and central nervous system.

(b) A chlorotic type of anemia is the rule, and this in turn lowers the general resistance, disturbs the metabolism, and in turn affects the rapidly growing nervous system.

(c) As a result of this, the reflexes are altered. Not only are the tendon reflexes increased and exaggerated, but the mental reactions and viscera reflexes are likewise and similarly affected. The visceral reflexes show the same hyperactivity and this has an important bearing on their function not only during this period but throughout life.

(d) The blood-pressure is reduced far below normal and persists through childhood, adolescence and adult life as such. Here again we are dealing with a factor that interferes with the general nutrition of the brain by an alteration of its blood supply, and is likewise one of the contributing factors to the disturbed reflex action of the organism.

(e) The constant, continuing strain in the defenses of the body to throw off an infection persisting for a long period of time, has an important influence on the life and vigor of the endocrine system. There is a tendency to accept the principle that a serious disturbance of any one of the endocrine glands has a disturbing, if not a pathologic effect on the functioning of all of these structures. Pulmonary tuberculosis is essentially a disease of the lymphatic structures. Its effect on the thymus, as a part of the lymphatic system, would tend, therefore, to derange the general endocrine functions. Systemic tuberculosis has been shown to produce a very decided effect directly on the thyroid, and my own studies of the pituitary have shown that it is rare in terminal tuberculosis to find a pituitary that does not show some structural change. It is not necessary here to call attention to the altered function of the adrenal, nor to the influence of this organ in depressed blood-pressure states.

Apart from the direct action of tuberculosis on the endocrine system, the stress of continuous effort of defense and balancing of function of a seriously damaged organ leads to a change in the nature of exhaustion that finds its secondary reaction at the time of adolescence.

(f) Finally, the general loss of tone and vigor leads to a general relaxation of tissue tone. This may be specific or a part of a general loss of tone. We find its manifestation in the relaxed chest and relaxed abdomen, a visceroptosis, flat feet, and the lower relaxed blood-pressure above noted.

When we sum up all these factors in a growing child, we have the marasmic or semi-marasmic, or hyponormal child physically, with flat chest and dropped abdomen, with increased mental and physical reflexes.

As the child grows to manhood, the increased mental reflexes give a hypersensitive individual, with a tendency to introspection to explain his physical limitations, and a tendency to dissociation of personality as a result of this. A mental accuity as a rule is the normal for the family and class type, and an ambition and drive far beyond the physical stamina, in this relaxed, undernourished, flat type of individual. These children in school are apt to grow into the scholastic type, and to take high places in their class and college.

Physiologically they are apt to be suspicious on account of the relative cerebral anemia, unhappy, restless, with nervous irritability, and nervous imbalance—a lessened degree of what is often seen as the nervous and mental picture in marked Pott's disease.

One can readily see in these cases the possibilities of trouble and unhappiness.

In cases where the brain tone is normal and of vigorous inheritance, the adolescent period may be passed without difficulty. It is, however, a period of danger.

If there should be no recrudescence of tuberculosis, there is still considerable danger from the readjustment of the endocrine mechanism. Not infrequently we see in this group of cases the development of adolescent insanity of the type of dementia præcox. It is, of course, understood that other conditions of intoxication, heredity, etc., may cause præcox; we are now dealing with this one on a pulmonary basis.

I take it that we are dealing here in this group with a complex type of intoxication acting on a brain and nervous system already damaged by the constant stress of the factors already enumerated. Transient mental states at the period of adolescence are very common. The function of growth of the metabolistic tissues on the part of the thyroid and pituitary having put these structures to a full strain, the new function of reproduction from the sexual glands adds a new factor to an already complex situation. The added stress of function on the entire endocrine system already damaged by the early infection leads to perversions of function. The arterial hypotension is accentuated, the thyroid is often enlarged, and there is a persistent tachycardia, various vasomotor disturbances, etc.

This condition, if not recognized in its etiology, may follow the usual course of a dementia precox terminating in dementia with death from pulmonary tuberculosis. Practically all of the præcox group in our institutions die eventually of tuberculosis.

When the nervous resistance to mental unbalance, inherited or through discipline, carries the individual through this dangerous period, we usually find in the matured adult a career of nervous energy alternating with periods of ill-health, due to exhaustion, the so-called neurasthenia in the flat chested, healed tuberculous type.

Between forty and fifty, the critical involutional period, when the sexual productive factor declines, and a new readjustment of the endocrine system is needed, a new complication in this neurasthenic type in the direction of the partial or complete failure of function is likely to occur.

This is the period of what may be termed the depressive psychosis. It usually begins with simple depression associated with indigestion, and irritability. This progresses slowly to a real melancholia, which on account of the high reflex excitability and nervous irritability, may be of the agitated type. Not infrequently the following syndrome is presented:

(a) Healed or slightly active tuberculosis,
(b) Arterial hypotension,
(c) Visceroptosis and flat feet,
(d) Hyponutrition,
(e) Mucous colitis,
(f) Hypothyroidism.

When we arrive at the senile and presenile periods, we meet with conditions often very puzzling: Uremic states with myocardial changes, arteriosclerosis, faulty action of the kidneys, with normal blood-pressure. These are the cases where through the life history of the patient we were dealing with blood-pressure varying from 90 to 110. In such cases a blood-pressure of 130 to 145 is the equivalent to 180 to 200 in the non-tuberculous individual. The senile and presenile mental states are not infrequently due to faulty action of the cardiorenal system on this basis.

So far, I have simply followed out the sequel or sequelæ of a damage to the machine at the first critical period. My time does not permit me to outline the physical and mental consequences of other early infections like syphilis, etc. In syphilis we have, in addition to the physical changes as a predominant factor, the mental shock with the same evil consequences of dissociation of the personality, nervous exhaustion and drag, as in the tuberculosis groups.

The evil effects of physical and mental damage at the involutional period, is not so great as at the first two critical periods. The life productive work is largely finished. The evil consequences of damage at this period are negligible from a biological standpoint.

They are often the harbingers of old age. The decadent period, after all, is the test of physical and mental fitness, of proper adjustment or maladjustment, of proper use or abuse of the machine.

In conclusion, I might state, that if in every case of mental disease, we take a careful, detailed history, involving the complete life periods, looking carefully for shocks and disease, and estimating their effect on the machine as a whole and the nervous system in particular, insanity will not be the mysterious entity that most doctors regard it. If to this we add very careful physical diagnosis, and a careful testing of the efficiency of the various organs, the case as a mental case diagnoses itself and the treatment becomes evident and easy to carry out.

DISCUSSION

Dr. Albert Robin (Wilmington, Del.): I should like to ask Dr. McCarthy if he denies the possibility of primary disease being caused by faulty mental adjustment?

Dr. McCarthy (in closing): I was talking on the physical basis. You cannot take too long a history of your patient. The trouble with all of us is that we are too lazy to take that detailed history, and what I was trying to point out here was the physical factor of a damaged baby. The child who is syphilitic or tubercular may grow up to adolescence as the normal boy or girl; the child who is weak and thin and with a weak physical frame cannot understand why he cannot go through his school work without nervous exhaustion. The sex factor is blamed as an important factor and supplies an explanation to account for the nervous break.

We should not disregard the psychogenic factor. I might say that I think if you took every individual in this room, you would find that you had conduct disorders during adolescence. But we all got through. It is only the individual with bad nervous reaction due to disease who breaks. When adolescence is reached and the reproductive mechanism of life comes into effect, then is the time when a serious breakdown may result for those predisposed by inherent physical weakness.

"HOMEMADE X-RAY DIAGNOSIS"

Under the above captioned editorial in the *American Journal of Roentgenology and Radium Therapy,* Vol. X, No. 7, Dr. Charles D. Enfield decries the installation of x-ray equipment by the general practitioner who, he claims, is incompetent to interpret correctly his own films, and therefore is unfair to his patients.

This question of the internist doing his own x-ray work has come up from time to time, and opinions, pro and con, have been expressed by the roentgenologists. Of course, the manufacturers of x-ray equipment are, for obvious reasons, urging the doctors to install the apparatus in their offices and save money to their patients. With the modern advances in construction, the invention of the Coolidge tube, it is now a very simple matter to operate an x-ray equipment, and, as Dr. Enfield says, "an intelligent person, with the general education and the special training in physics, chemistry and anatomy which every well-trained physician possesses, could learn more easily to make satisfactory routine roentgenograms than to type a neat letter in a reasonable length of time." But, can this "medical technician" interpret his own films as well as the roentgenologist who devotes his entire time to this specialty?

In taking up this discussion we should exclude the made-in-a-day practitioner-radiologist who either takes a short course in radiology or else gets his information solely from the manufacturer or his detail man. In fairness, we should also exclude the half-baked, immature radiologist-specialist. The fact that the latter does x-ray work exclusively is no guaranty that his interpretations are any more reliable than those of the physician who merely dabbles in radiology. That there is an exceedingly large number of immature radiologists is unfortunately true, and this fact goes far towards controverting Dr. Enfield's argument in favor of the x-ray specialist.

The correct interpretation of shadows requires, aside from a natural acumen and experience, an intimate knowledge of anatomy, physiology and gross pathology of all the structures of the body, and, in addition, a vast experience in a large hospital in which the interpretations are checked up by operations or autopsy. How many radiologists in this country have had such training?

As a matter of fact, the internist or specialist who interprets his own films can do so much more accurately by reason of the exhaustive knowledge he possesses of the anatomy, physiology and pathology in his chosen field.

As in photography, the narrower the field of observation, the smaller the focus, the greater will be the definition, if sufficient time be allowed. To keep pace with the medical profession, radiology should, by rights, be split up into a number of specialties. There should be a neuro-radiologist, a sinus-radiologist, a chest-radiologist, a gastro-enterology-radiologist, a pelvic-radiologist, an orthopedic-radiologist, etc. To assume that any one man can encompass all the branches of medicine and surgery as related to x-ray, is to go back to the time when there were no specialists in medicine. If the truth be known, it is the specialist who frequnetly helps the radiologist to interpret his films, in the light of his special knowledge of the particular case. Left alone, without this assistance, the average radiologist falls into error quite often.

The physician who employs the x-ray as an additional aid in diagnosis, and who is honest with himself and his patient, will not attempt to diagnose a tumor of the brain, do pyelography or pneumoperitoneum, or accept his x-ray findings as final in borderline cases. He will find sufficient compensation in the aid furnished by the x-ray in the well-defined cases in which the physical signs or symptoms are either insufficient or misleading. He will encounter cases of tuberculosis in which the x-ray discloses a much more extensive lesion than is indicated by physical examination. He will find fluid in a chest, where the physical signs were doubtful. He will learn by the aid of the x-ray that not all cases of gastro-enteroptosis are pathologic. He will be able to differentiate between spastic and atonic constipation. He will be materially aided in the diagnosis of gall-bladder disease by the indirect evidence of gastric irritability and adhesions, as disclosed on the screen or film. A normal cap will assure him of the absence of a duodenal ulcer, while a marked filling defect, when correlated to his clinical findings, will establish a diagnosis of ulcer or carcinoma. Within thsee limitations, the conscientious physician will find himself amply repaid for the time and effort it takes to acquire the technic of this modern aid to diagnosis. Also, if he is honest with himself and his patient, he will refer his borderline or doubtful cases to experts in roentgenology, just as he calls to his aid specialists in various branches of medicine when he deems it for the best interests of his patients. A. R.

LITTLE JOURNEYS IN GENERAL PRACTICE

BY A GENERAL PRACTITIONER

CUT RATES

I am almost fearful that my fellow practitioners will take exception to many things I may say throughout my little journeys; but I want them all to know that what I might say is not said with any malice or jealousy or ulterior motive.

I myself may not be above reproach in many things—I do not doubt but that I have buried perhaps, as many patients as my neighbor. I am only attempting to show up some of *our* little faults and failings toward each other, in hopes that perhaps all of us can get together and correct our individual misunderstandings.

Take, for instance, small town practice. Here, I have discovered, in the average small town which supports five or six doctors, that there is always one who is "out of step." You may recall the old Irish joke about the raw recruit from Cork, who told his mother that he never understood how dumb the average Irishman was until he entered the army, and every day, at drill, nearly all the company was out of step, except him.

The fact is that in every small town there is always one man who works contrary to the ethics of his fellow doctors. Sometimes it is a homeopath, and then we can all say "The profession is being ruined by these d—— homeopaths," but more frequently it is a member of our own school. (Speaking along this line, I cannot resist repeating the quotation of a well-known eye and ear man of Wilmington, who was recently appointed a member of a notorious get-together commission, on which the doctors were supposed to be in the majority. After the first meeting of the commission he is quoted as saying in disgust, "What could you expect us to do? There we were, only three doctors with three d—— women and a d—— homeopath! Our hands are tied.")

As a matter of fact, I have often found that our cousins of Hahnemann persuation are more loyal to the profession than a large percentage of our own craft.

It is useless for the doctors of a town such as I have in mind to try to get together on any subject. If we desire to raise our fees, the one brother refuses to join in with us. He therefore becomes as a cut-rate drug store.

Many of our patients argue, "Why send for Dr. B. or Dr. L., who charge us $2.00 a visit, when we can get Dr. C. for $1.50?"

Many poor people, many of the lower classes, have to watch their pennies and nickles. They shop all over town for the cheapest sugar and eggs and clothing, and they do not seem to realize that a doctor's office is not a butcher shop nor a five- and ten-cent store. They argue that one doctor is as good as another.

I overheard a conversation in a drug store not long ago. I was behind the prescription counter and could see without being seen. A woman came in with a prescription written by one of my local competitors. Another woman was with her and remarked, "Why, I thought Dr. X. (myself) was always your doctor; why did you change?" And my patient replied, "I like Dr. X. fine; he's grand, and he always helps us when we're sick and will come at any time we send for him, but his office charges are too high. Dr. Blank charges fifty cents less, and when we're not very sick we have to go to Dr. Blank."

I didn't feel hurt. I was complimented.

But why does "Dr. Blank" cut his fees? He is a good physician. I believe he is honest, but he always cuts his fees. I believe if the rest of us charged ten cents a visit, he would offer to go for nine. I do not believe in raising our fees so that the public cannot stand them. I do not believe in working the coal mine strikers' act on our patients. I do not believe in lowering our standards. But I do believe that every physician should demand a fair fee for his services.

A specialist naturally can and does get ofttimes an enormous fee, considering his work, but the patient pays for *expert* advice. The average general practitioner does *not* receive compensation proportionate to his services rendered. And when he has a fellow physician not two blocks away who will cut his fees from twenty-five cents to a dollar, it lowers the entire medical profession in the eyes of the average citizen.

Small towns are not ordinarily composed entirely of college graduates, highly intellectual people, or of persons who have traveled and studied. They are composed largely of hard-working, honest (for the most part) and mentally dull persons who think a dollar is as big as the moon and almost as hard to get. To them a doctor is a doctor. They do not differentiate a gynecologist from a pediatrician nor a surgeon from a sanitary expert. They are all doctors; and one is almost as good as the other. The only difference is that one charges fifty cents more! or less!!

If the medical profession is to progress in the respect of the community and of the country and nation at large, we must not only "produce results," hold the respect of the general public and be representative citizens, but *we must be honest with each other.*

When I cut my fee below that of my neighbor doctor, I hurt the entire medical fraternity. When I answer back because he has cut his fees below mine, and tell the public, "Well, he *should* charge less than I do because he isn't as good a doctor," I hurt the entire profession because my hearers cannot define one doctor from another. They respect and trust us all, and if half of us are incompetent, to which half do I belong? That is the question the public will ask themselves about us individually.

LETTERS FROM ABROAD

Vienna, August 6, 1923.

My Dear Doctor:

It was not without serious misgivings that I decided to go abroad for special study. What with the uncertainty in the political situation and the economic distress, one would suppose that affairs in the medical world could not possibly be in a normal state.

However, on reaching Vienna, I found that "while alterations are in progress, business is going on at the old stand."

It took some time to orient myself. In a strange country, with strange customs and a strange language, one is apt to lose his nerve. But as he gets accustomed to the new environment, he is sure to realize what a wonderful medical center this city is.

The Allgemeine Krankenhause is a city in itself. With a population of from ten to fifteen thousand patients and numerous hospital buildings, it presents the most imposing structure in the world. A number of very interesting courses are given here. Prof. Erdheimer gives a course in pathology. It is a treat to listen to him. He performs from 3 to 6 autopsies during his daily lectures. Every pathological condition is demonstrated with unsurpassed skill and precision. First, the gross pathology is shown; then the organ is dissected minutely to show the finer changes. While this is being done, he goes into the theory of the origin and the order in which the pathologic changes took place in that particular patient, correlating them with the symptoms and clinical history. In his pathological museum he has in a state of perfect preservation specimens of every anomaly and pathologic condition you can think of. I found records of autopsies performed as far back as 1817. I was told that they have about 200,000 records of autopsies. These records are not superficial, but cover the minutest details.

I find that the professors as well as the *privat dozents* are full-time men. The clinicians and the *dozents* live in the hospital. There is such a wealth of material that when a professor lectures on a certain condition he has at his command ten to fifteen cases to demonstrate before the students.

A very interesting course in endocrinology is given by Prof. Frankle. Then there is operative surgery on the abdomen, pathology of the female pelvic organs, with gross and microscopic study of the fresh and preserved specimens, cystoscopy and anatomy with dissection; also gynecologic surgery on the cadaver. The course on gynecologic diagnosis and therapy is limited to groups of two or three, each man making his own examinations and study of the patient.

My impression is that the facilities and opportunities one has here for study and research are superior to those found in other medical centers. While a good deal has been commercialized, yet the big men are anxious to do all in their power to help the students. Jacob S. Keyser, M.D.

BOOKS RECEIVED

The Ophthalmic Year Book, Volume XIX, Containing Bibliographies, Digests and Indexes of the Literature of Ophthalmology for the Year 1922. Edited by Edward Jackson and William H. Crisp and collaborators. Cloth, 390 pages. Chicago: The Ophthalmic Publishing Company, July, 1923.

The Practical Medicine Series, Volume I, General Medicine. Under the General Editorial Charge of Charles L. Mix, A.M., M.D. Series 1923. Chicago: The Year Book Publishers, 304 South Dearborn Street.

Birth Statistics for The Birth Registration Area of the United States, 1921. Seventh Annual Report of Department of Commerce, Bureau of the Census, W. M. Steuart, Director. Washington: Government Printing Office, 1923. Price 35 cents.

A Clinical Guide to Bedside Examination. By Dr. H. Elias, Dr. N. Jagic and Dr. A. Luger of the University of Vienna, Austria. Arranged and Translated by Wm. A. Brams, M.D., Chicago, Ill., Adjunct in Medicine, Michael Reese Hospital, formerly Lieutenant Commander, Medical Corps, United States Navy. New York: Rebman Company, 59 West 51st Street. Price $1.50.

Hygiene of the Voice. By Irving Wilson Voorhees, M.S. (Princeton); M.D. (Columbia). Assistant Surgeon to the Manhattan Eye, Ear and Throat Hospital; Consultant to the Tarrytown and to the Rockaway Beach Hospitals; Adviser to singers of the Metropolitan, Chicago, and Century Opera Companies, etc. New York: The Macmillan Company, 1923. Price $2.50.

BOOK REVIEWS

DISEASES OF THE RECTUM, ANUS, AND COLON, by Samuel Goodwin Gant, M.D., LL.D., Professor and Chief of the Department for Diseases of the Colon, Rectum and Anus, at the Broad Street Hospital, Graduate School of Medicine, New York City. Three octavo volumes, totaling 1,616 pages with 1,128 illustrations on 1,085 figures and 10 insets in colors. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, $25.00 net.

This work is a crowning triumph to Dr. Gant, who has probably contributed more to literature on rectal and intestinal diseases than any other writer. Through his untiring efforts he has placed in the hands of the medical profession a treatise of great value. The work is well written and beautifully illustrated with many new plates in addition to quite a few older ones used in former works.

Chapter III of Volume I, on "Diagnostic Significance of Manifestations Pertaining to Anorectal Disease," is unique and is divided into forty-one signs, each one of which is treated separately. To pain, hemorrhage, and discharge the most space is given.

The author considers that rectal and colonic lesions are easily recognized, but as neighboring organs and distant parts of the anorectal canal are often "directly or indirectly responsible for lower bowel symptoms" and some difficulty may be experienced in their detection, a "careful general and local examination is necessary." Examination of the stools, blood and by the x-ray are valuable adjuncts, especially in colonic diseases.

The chapter on anesthesia is interesting. He discusses the different methods, both local and general. Locally he has had considerable success by the use of sterile water injected with a hypodermic syringe. Eucaine is his drug of choice in one-eighth of one per cent. By these he has done much of his rectal work and reports splendid results in major surgery.

The chapter on "Papilitis, Cryptitis and Sphincteralgia" contains much that is new and interesting. The etiology of sphincteralgia embraces many affections, some of which are so obscure as to baffle even one who has specialized in rectal diseases. As in many affections remote from the rectum, reflex conditions may be the underlying cause.

The latter half of the first volume is devoted to the consideration of fissure, proctitis, fistulæ and hemorrhoids. Considerable space is given to palliative treatment of fissure; while this may relieve, it seldom effects a cure and some radical measures must be resorted to. The author advocates the division of the fissure and sphincter by either a knife or scissors. This may be done under either local or general anesthesia. Divulsion has been abandoned because of serious sequelæ.

The chapter on "Catarrhal and Infectious Proctitis and Rectitis" is very interesting in that it introduces, as it were, a condition heretofore not considered as an entity. It is well treated and thoroughly worked out. He divides the condition under two heads, catarrhal proctitis and infective specific proctitis. Of the catarrhal variety there are the acute and chronic stages. Etiologically the catarrhal variety is a condition most frequently found in the north while the infective variety is a tropical disease. Unhygienic conditions, indiscretion in eating, excessive use of purgative, mechanical irritants, as foreign substances in the feces, worms and excessive use of irritating enemas, psychic and neurotic disturbances and gastro-intestinal disorders are provocative of this condition. Intestinal obstruction, whether due to impactions, neoplasms or other causes, may tend to set up inflammations reaching the rectum. The opinion of the author that "Catarrhal proctitis and associated mixed infection is responsible for more rectal stricture than all other varieties of proctitis, including luetic, tubercular or other infective types," is somewhat of a revelation.

In the treatment of this condition local measures are given prominence. The use of stimulating or astringent powders or sprays, suppositories of anodynes, topical applications directly to the ulcerating or inflamed parts and proper regulation of the bowels are amongst the measures suggested. Surgical treatment, except for the removal of pathologic lesions, is not indicated.

In the consideration of fistulæ the causation is treated under one head, "Periproctitis." Infection in some form is responsible for the abscess, the chief factors being the colon bacilli, staphylococci, streptococci and tubercle bacilli. Perirectal and perineal abscesses "in 95 per cent of cases perforate the anal canal in the posterior median line."

Palliative treatment of abscesses is contraindicated because of the rapid extension of the inflammation. The abscess must be incised under some general anesthetic, preferably gas, and all necrotic tissue removed. Local anesthesia should only be used in small and superficial abscesses. The author does not drain the abscess and wait for the formation of the fistula, but concludes the operation at the first sitting. This is contrary to the teaching of quite a number of proctologists.

The reasons why abscesses in the ano-rectal region do not as a rule heal spontaneously is explained as due to the inflamed area getting little rest; to the little resistance offered by tissues in this region, so that pus burrows, gas and feces escape to the abscess cavity and reinfect; and to imperfect drainage to the abscess and tubercular infection.

The etiology, symptomatology and treatment of fistula is given considerable space and is exhaustive. Quite a number of interesting points are brought out. We mention two: The number of cases occurring in persons under twenty-one years of age, and the very large classification under two types. In the line of treatment nothing new is offered. The operation may be performed under local or general anesthesia, depending upon the type and extent of the fistula. The sphincter may be cut in one or more places without causing incontinence. In summing up the cases of incontinence seen by the author, he claims that "it is not due so much to cutting the sphincter as to the surgeon's imperfect operative technic and bad management of the wound, cutting the muscle obliquely, * * * rather than at a right angle."

Over one hundred pages are devoted to hemorrhoids. This condition is but seldom seen in persons under twenty. External or thrombotic piles are treated by incision under local anesthesia, the clot turned out, overhanging edges trimmed away and the cavity lightly packed with gauze. By this technic, bleeding is arrested and a secondary clot cannot form.

The injection method for the treatment of internal hemorrhoids is seldom used. Excision after ligation is the favorite method, under local anesthesia. Various means are given for extruding the hemorrhoids. The procedure does not differ materially from that of other proctologists. The clamp and cautery are seldom used. The postoperative treatment is simple—short confinement to bed in hospital or home, liberal diet and regulation of bowels. The patient is allowed to follow his occupation at the earliest possible moment and subsequent dressings are done at the office.

Volume II is devoted to the consideration of hemorrhage, procidentia, ulcerations, skin lesions, stricture, malignant growths and several conditions of the intestinal tract.

In hemorrhage of the rectum and anus the author enumerates a great number of causes. These causes can be summed up in several words—carelessness in operative technic. Control of hemorrhage, if arterial and low down, is possible by ligation. Packing of the anal canal and rectum by gauze by one of several methods and the application of a tight pyramid gauze compress is effectual. Styptics are not advocated.

Procidentia is curable by operation, but this will fail unless the factors causing the condition are overcome. In first degree prolapse, linear cauterization is the method of choice, but unless the mucous membrane is cut through, very little inflammation and no scar tissue follows and no cure results. In second degree cases he has devised a posterior proctoplasty in which, "through a semicircular incision midway between the coccyx and anus the rectum is freed, brought outside and incised longitudinally" and by suturing this incision transversely the rectum is shortened. For third degree procidentia, because of failures under usual operations, he has worked out a technic "which has proved effective in nearly all cases." It is done in three steps or distinct operations. First, gut is put on stretch and upper extremity cauterized entirely around by linear burns through the mucous and penetrating the muscular coat. Second, a diamond-shaped piece of tissue three inches long, including all rectal coats and one inch of external sphincter with skin and deep structures, is removed. A wick drain is placed in posterior angle and approximated with deep and superficial iodized sutures. Third, outer border of rectus is incised, sigmoid drawn up, and suspended to musculature of anterior abdominal wall.

Pruritus ani is well treated, the various causes and methods of treatment being given. A button-hole operation, replacing that of Ball, for division of the sensory nerves, appears to one as having considerable merit.

Considerable space is devoted to skin affections and tuberculosis of the perianal region, especially ulcerative conditions of a tubercular nature. The author has treated one hundred cases with varying results.

Stricture of the rectum is not of frequent occurrence, as not over two per cent of all rectal cases seen by the author have suffered from this affection. The great majority are within three inches of the anus. There are eleven classifications mentioned, the most common type being the spasmodic variety. Operative procedure is preferable to conservative measures. In the simple variety, when low down, proctotomy is the simplest method.

Two chapters of unusual interest are on gas, fecal and mucous cysts and rectal diverticula. These are "conditions rarely mentioned in literature but which are occasionally encountered by the proctologist." He cites nine cases each of cysts and diverticula and has detailed operative procedure for the various conditions.

As to the etiology of malignancy, nothing new is given. From his personal experience, Gant believes cancer to be "more common in persons under twenty

(Continued on page xiv.)

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ADDRESS

THE BROADER VIEWPOINT*

ADAM J. SIMPSON, M.D.,
CHESTER, PA.

The thought that the fully equipped physician must know more than his special branch is neither original nor new. The antiquity of the idea may be appreciated when we read that over two hundred years before the establishment of the Gutenberg printing press, Lanfranc, called the father of French surgery, remarked that "no one can be a good physician who has no idea of surgical operations, and a surgeon is nothing if ignorant of medicine." It is no less true to-day than in the 13th century that one must be more familiar with the two main branches, medicine and surgery, with an intimate knowledge of, and a keen interest in the specialties. The lives of the really great physicians, from Hippocrates to Osler, testify to the importance of this broad viewpoint.

There is a saying that the wisest physician is the one that knows the uselessness of the most medicines. No less wise is the one who strongly opposes surgical intervention when in his opinion it is not warranted and as vigorously demands it when he thinks it is indicated. This balance of mind is obtained in no better way than by the physician following his patient to the operating room and seeing the living pathology. The curiosity to know every phase of an illness should be insatiable and might well be inculcated into the student, lest he be led to feel that it is unnecessary for a diagnosis, to examine the patient himself. So often during his college and hospital years he has seen the following: Someone gets the history, another makes the physical examination, still others do the x-ray and laboratory work and so on. To the student mind the physicians do nothing but sit and expound. There is not a practical move in such exercises.

The one real practical test a student gets, whether he is going to specialize in ophthalmology or dermatology, is obstetrics. The fact that this bedside training has persisted through all the changes in medical teaching is the strongest argument in favor of the method. The idea has been suggested of introducing a house-to-house practice into the curriculum, giving the student an opportunity to become familiar with the stethoscope and thermometer and to use his fingers and wits. This broader education is evidenced in the British surgeon, who has no degree in medicine, but is a better trained physician than the American surgeon, who has an M.D. degree and admits he knows little medicine. He looks to the internist to show him the way when a better knowledge of accepted physical signs might save him time and some embarrassment. It must not be overlooked, however, that this contracted viewpoint is a two-edged sword that cuts the internist just as deeply, for while the surgeon cannot expose lesions that will enlighten those interested alone in blood urea, Wassermanns, calorimeter or cardiographic readings, he can show many pathological changes that exist during the life of the patient, and this knowledge may be had by simply being at the operation and looking.

Lest some might feel that an indictment had been lodged against the surgeon, we could quickly call to mind many broad-minded men doing that special work who would be stars of the first magnitude in medicine. It is interesting to recall that the late John B. Murphy was the first to produce an artificial pneumothorax for the arrest and cure of tuberculosis. It was the impetus given by his announcement in 1898 which influenced Brauer, professor of medicine in Vienna, to take up the work so actively and to continue this activity up to the present time. In our own branch there could be no nicer exhibition of the medical mind crossing to the surgical field than that of H. C. Jacobeaus, Professor of Medicine at Stockholm, conceiving and putting into execution the idea of resting the diseased lung by cutting the adhesions with a cautery through an endoscope.

It is not a bit more important that the surgeon should have a more intimate knowledge of neurology or the ophthalmologist should know of the changes to be looked for in the kidneys, heart and blood vessels, than it is that the internist should, as the occasion arises, be able to use the ophthalmoscope or to have a working knowledge of the tasks he sets for the pathologist and roentgenologist. Many have called our attention to the danger of limiting our range in medicine and of placing mental boundaries about the various specialties. Are we tending toward a reunion of our forces or are we becoming so intent on our individual work that we cannot see our colleague's point of view? For example: If we are to get the proper angle of the pediatrist it is advisable to consider him as one interested in the psychology of childhood and the nutrition of the infant and child, rather than merely diseases of childhood, in other words, viewing it more from the standpoint of the child than of diseases. To get the urologist's point of view, he would have us look at his work as one directed to the diagnosis and management of diseased organs, especially the genito-urinary tract, which are so often secondary to systemic infection, and the psychology incident to such infection; rather than venereal diseases only. The modern ophthalmologist is not alone interested in lenses and lettered charts. He reaches his conclusions by a critical study of the underlying systemic conditions and a searching investigation into the obscure focal infections.

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*The Chairman's Address, delivered before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 2, 1923.

The viewpoints of these different specialists is of great interest to us and the information thus gleaned from our knowledge of the ones that border on our own particular work cannot help but make for better and clearer diagnosis.

Perhaps this broader view is the art of medicine. Perhaps this art of medicine cannot be taught; but the fundamental principles upon which it is based can be formulated and stated. He who essays to acquire the art can then decide whether it is beyond his accomplishment or not. At least he should have the opportunity and he should be constantly reminded that such an acquisition is essential to his success.

ORIGINAL ARTICLES

THE LAURELTON STATE VILLAGE AND PENNSYLVANIA'S PROBLEM OF MENTAL DEFICIENCY*

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A realization of the prevalence of mental deficiency and the menace it constitutes in our body politic began to take form about fifteen years ago. Studies carried on by Dr. H. H. Goddard, of the Vineland Training School, Vineland, N. J., together with investigations made among "The Pineys" of Southern New Jersey, served to focus attention upon the relation of mental defectiveness to the public welfare. As a result of this work and through the aid of persons of means whose interest in this question had been aroused, research studies were carried on in various places with a view to ascertaining the number and character of mental defectives in our population and the best methods of lessening or obliterating mental deficiency. In 1913 Dr. Wilhelmina Key carried on some of these research studies in one of the rural counties of Pennsylvania with a population of sixteen thousand. In two areas of this country, Dr. Key found 57% and 26% of mental deficiency respectively. She also discovered that in these areas incest and close intermarriage were prevalent. In the areas adjoining those already mentioned, she found 6.4% of mental defectiveness, while in the remainder of the county mental deficiency averaged 1.72%. This shows that those living in close proximity to areas having a high percentage of mental defectives intermarry, to a certain extent, with those within these areas and thus increase the percentage of mental deficiency in adjacent territory. These studies also revealed that the greater part of the alcoholism, pauperism, immorality, crime, etc., in this county originated in those portions of the county containing the highest percentage of defectives and that the proportion of mental deficiency existing in any part of the county bore a distinct relation to the need for court action and assistance from the charitable agencies of the county. This led to a study of the accounts in the office of the County Commissioners, which yielded the information that the mental defectives of that county had cost its citizens $265,000 in twenty-five years. These figures represent only the amount paid out by the county officials and do not take into consideration the charitable gifts made by private individuals, nor the losses sustained through petty thieving and depredations endured without recourse to legal action. When we consider that the facts ascertained through these studies relate to one of the smallest counties in Pennsylvania in point of population, it is not difficult to realize what the facts must be with regard to our more populous counties or to the state as a whole. At the time of these investigations, it was estimated that there were twenty-two thousand mental defectives in Pennsylvania. Psychological tests carried on during the World War have shown that this estimate must be increased to at least thirty thousand at the present time. When it is realized that 80% to 90% of mental deficiency is hereditary, that mothers who are subnormal mentally, average eight children to two for normal mothers and that many high grade mental defectives are unrecognized because of a superficial appearance of intelligence, the presence of this large number of defectives in the population of our state takes on added significance.

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Recognition of these facts led to the establishing of the Laurelton State Village in order that, by segregating the feeble-minded women of child-bearing age, they might be prevented from reproducing their defects in coming generations and thus lessen the number of mental defectives. Although ten years have elapsed since the legislature passed the law establishing the Laurelton State Village, there are accommodations in it for only one hundred fifty girls and appropriations available for housing one hundred twenty-five additional defectives. If in a period of ten years Pennsylvania has provided for the segregation of two hundred seventy-five of her eight thousand feeble-minded women of child-bearing age, how soon will the state wipe out mental deficiency by means of segregation? If this method of attacking the problem of mental deficiency is to be successful, the state will have to increase very materially its appropriations for caring for these cases.

Under existing circumstances, it is most important that the best use be made of our present institutions for mental defectives. Although the Laurelton State Village is a comparatively young institution and has but a small population, certain conditions have already arisen which, if allowed to continue and increase, will interfere greatly with the usefulness of this institution to the state. In the short time the Village has been in existence, a number of women who have passed the child-bearing period have accumulated in the institution. It has been possible, after prolonged and strenuous efforts, to have some of these cases removed; but some still remain. The relatives of these women and the counties from which they originate are very loath to resume their care. If these older women, who are no longer a menace to the state, are permitted to remain in the Laurelton State Village, which was to be "entirely and specially devoted to the reception, segregation, detention, care and training of feeble-minded women of child-bearing age," and are allowed to occupy places that should be given to younger women who are a menace to the public, it will interfere greatly with the work of the Village in its relation to the welfare of the state. Some arrangement should be made whereby every woman who has passed the child-bearing period, should be removed from this institution automatically.

Another way in which the care and training given at the Laurelton State Village can be extended to a larger number of mentally defective girls is through the establishing of properly supervised colonies, in which certain selected groups of girls, who have already profited by the care and training of the institution, can be placed. While these colonies should be located at some distance from the Village, they should be in touch with and under the direction of the parent institution. Although it is impossible to train mentally defective girls in such a way as to produce a normal mental equipment, it is possible by care and training to develop to its full capacity what mental ability they possess and to inculcate a degree of self-control that would not have been developed without discipline and training. Certain girls could never be trained for colony life; but others, after a prolonged course of care and training, would be worthy of a trial in the outside world under supervision. This method of enlarging the usefulness of our institutions for mental defectives should receive serious consideration.

While there are eight thousand women in Pennsylvania who could properly be committed to the Laurelton State Village, not all of them are necessarily institution cases. They vary decidedly in the extent to which they are a menace to the public welfare. Under present conditions, with a far greater number of applicants clamoring for admission to our institutions for mental defectives than they can possibly accommodate for some years to come, a selection should be made from among these applicants and those given the preference that are the greatest menace to the state. Since all of these cases cannot be accommodated, the welfare of the state should be considered rather than the comfort of some family that finds it inconvenient and a burden to care for some perfectly innocuous relative and hence desires her admission to an institution. Those mental defectives who have shown immoral or antisocial tendencies should have first call on any available institution accommodations; while those that are harmless and have shown no such tendencies should remain with their relatives until those cases that are a real menace have been provided for. Of course, this means that the proportion of delinquent defectives in our institutions would be greatly increased and, as they are the hardest problems with which those in charge of these institutions have to deal, it would render their work more difficult. This discussion is not, however, concerned with what would be of advantage or disadvantage to these institutions, but with what would be of the greatest advantage to the state.

If Pennsylvania is to reap the full benefit of segregating her feeble-minded women during the child-bearing period, these girls must be placed under care earlier in life. Of the one hundred seventy-four girls admitted to the Laurelton State Village, fifty-three have had from one to seven children each. These defectives have had a total of one hundred fourteen children prior to their admission, ninety-nine of whom were illegitimate. Wherever possible, these girls should be placed under care so early that no children could be born to them.

The inadvisability of permitting mental defectives to be at large and to reproduce their kind, both from the standpoint of cost and of its effect upon the mental ability of our population, has been placed before you. It has been shown, also, that the present arrangements for handling this problem by segregation are entirely inadequate and will be so until sufficiently large appropriations are made to cope with the situation. If past experience is any criterion, it will be difficult to get our legislators to make adequate appropriations for this purpose. It is also a question whether appropriations for segregation of such magnitude as would be necessary could be set aside for this purpose without depriving some other worthy charity of its fair proportion of public support or without imposing an undue burden upon the taxpayers of the state. With these facts in mind, let us view this problem from another standpoint—one which so far has been distasteful to the general public—the use of surgical methods in preventing the reproduction of mental defectives. Whether the prospect is pleasant or not, the public must face the fact that they must pay the price, both financial and racial, of permitting mental defectives to have unhampered freedom; or they must shoulder the expense of segregating them—and this will be a tremendous bill; or they must bring themselves to accept the much cheaper and far more efficient method of using surgical means to accómplish this end. So far, little has been said of the male mental defective. It must be remembered that, while he has not been the same subject of public discussion as the feeble-minded woman of child-bearing age, he is equally capable of reproducing his defects in his children. This makes it equally important that he should be prevented from reproducing his kind. Owing to his physical structure, the male mental defective is far better adapted for the use of surgery for this purpose than is the female mental defective. This method of dealing with the problem of mental deficiency could undoubtedly be used far more widely than is being done, with benefit to the race and to the taxpayers of the state. Especially is this true in the case of the male mental defective. The members of the medical profession should give careful thought to their responsibility for educating the public to accept surgery as a means of solving this problem, either partially or wholly, and for giving their support to legislation that would make it lawful to use surgical means to terminate mentally defective strains.

Before closing, it is necessary to mention the relation of immigration to mental deficiency. Psychological studies, based upon investigations made at the time of the World War, have shown conclusively that the character of immigration into the United States has changed quite markedly in the last thirty years. The great majority of the immigrants now entering the United States are of distinctly lower mental types than those who came to us several decades ago. Not only is the average mentality lower, but there are, also, among them a goodly number of high grade defectives. At Ellis Island they weed out all of the palpably defective newcomers, but many high grade defectives must necessarily be overlooked. The industries and coal mines of Pennsylvania are absorbing a large proportion of the immigrants at present coming into the United States. Many of these people are from those countries showing the lowest average mentality. This necessarily raises the question as to how far we are permitting immigration to nullify our present efforts to control mental deficiency. In view of these facts, should we not be staunch supporters of the enactment of a strictly limiting and highly selective immigration law?

DISCUSSION

Dr. William C. Sandy (Harrisburg): Doctor Wolfe has very ably presented the situation at Laurelton. It is discouraging to those interested in public welfare and the protection of mental defectives that this institution has been developed so slowly. And it is still more discouraging to realize that the development will be practically at a standstill for a few years, at least. Under these circumstances I am sure that Doctor Wolfe will pardon me if I take a few minutes to discuss certain other phases of this important question.

Before doing this, however, I wish to speak a word about sterilization. Unfortunately, a great deal of educational work will have to be done before we can do much in the way of the sterilization of mental defectives. In the first place, certain religious organizations are unalterably opposed to such procedure. And secondly, such State laws as have been on the statute books in other States have been largely declared unconstitutional, notably in New York and New Jersey. So sterilization, valuable as it is, would only have a limited application, and we will have left the so-called "normal" individuals who still have hereditary taints which will continue to crop out from time to time.

The general attitude toward mental defectives at present is a realization that the problem is greater than we had supposed it to be. In fact, it is a question now whether or not we can consider segregation as the main procedure. I doubt if Pennsylvania or any other state would be able to consider segregation of any large percentage of mental defectives when we know, as Doctor Wolfe has stated, that there are perhaps 30,000 outside of institutions. We must use the institutions for special centers for training and to take care of cases where other provisions cannot be made, but with such a large percentage outside the institutions we must emphasize the community activities in this regard, I refer especially to the importance of finding the mental defectives in the schools early, providing special classes for their training, and a certain amount of supervision in the community. We must also make provision in this state for continued segregation of delinquent mental defectives. In our courts we are continually sentencing delinquents and allowing them to go, many of them being mental defectives who should be segregated more or less permanently.

Finally, there is a great need for increase of institutional accommodations. We should have at least twice as many accommodations for mental defectives in this State as we have now, and we also need greater activities in the community, such as mental clinics and special classes. If we can provide facilities of those kinds, we will prevent to a great extent many distressing complications that now exist as to the mental defectives.

Dr. William W. Richardson (Mercer): Dr. Wolfe has very ably presented the problem of the feebleminded woman, and it is for us as members of the medical profession to help find the remedy. The people of the State look to us for guidance and counsel on public health problems. I think we can get some valuable suggestions from the way in which the prohibition program in the country was put across. While we admit that prohibition legislation has not been altogether effective, it is better than nothing at all, and it was put across largely through propaganda and advertising. It was presented from an economic standpoint —the taxpayers were made to realize that they would no longer be compelled to support large numbers of people insane from alcohol. The same thing was true in the success of the tuberculosis movement—that was brought about largely through propaganda and advertising. The only way in which we can expect to provide in any adequate manner for the mentally defective is by efficient propaganda and advertising, making the public and the legislators realize that it is really an economic problem, that if we do not take care of them our taxes will increase, and if we do, our taxes will eventually be reduced.

Dr. Mary M. Wolfe (in closing): I have no illusions at all in regard to sterilization. I did not speak of it with the idea that it was likely to take a prominent place as a solution of this problem, at least for some time to come. I do think, however, that the matter of colonization mentioned in my paper is of considerable value and might, with advantage, be started at once. I think also that if some laws were passed which would permit those in charge of institutions for mental defectives to use their judgment as to the matter of sterilization in certain selected cases, the cost of the maintenance of mental defectives to the taxpayers would be cut down quite appreciably, since these men and women could be permitted to leave our institutions and give place to others who need their care and protection.

I am very glad that Dr. Sandy spoke about the importance of more general mental examinations and of discovering these cases early. We should press forward to the day when mental examinations of the children in our public schools will be given as regularly as physical examinations are given to-day. Until we reach that time, I do not believe we will get very far in solving this problem. I hope that day may come. It would be a great help in many ways.

HOUSE DUST IN ASTHMA*

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The study of asthma is both absorbing and puzzling. Our knowledge of its essential nature is very incomplete, and the results of treatment are therefore far from satisfactory. Additional information has been gained in recent years by approaching the subject from an immunologic viewpoint. For some time the extreme sensitiveness of hay fever victims to pollens has been well-known. Pollen was also recognized as the causative factor in many sufferers from asthma, and later on the rôle of animal dandruffs, such as those of horse, cat, dog and others, became familiar knowledge. It has also been shown that the closely related phenomena, urticaria and angioneurotic edema, have in some instances been due to the ingestion of certain foods to which the patient was hypersensitive. With these facts in mind, investigators have engaged in recent years, in the study of the nature of the substances to which a patient is hypersensitive and the reactions the patient in turn exhibits. Cooke and Coca, in their classification of hypersensitiveness, have placed asthma, hay fever and certain closely allied conditions, in a group to which they applied the name *atopy,* a term derived from the Greek word *"atopos,"* meaning out of place and hence strange or unusual. This classification emphasizes the fact that atopy and anaphylaxis are different forms of abnormal hypersensitiveness, that asthma and hay fever are not anaphylactic phenomena.

The result of recent investigations has been to demonstrate that the symptoms in most asthmatics are due to the absorption, most frequently by inhalation, of specific substances to which the patient, for some unknown reason, is unusually sensitive. To these specific substances has been applied the term *atopen,* from the word atopy.

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Other etiologic factors are: deflected nasal septum, paranasal sinus infections, diseased tonsils, bronchiectasis, and other pathologic states more remote, which may act in a reflex manner; but these factors are probably secondary in importance, yielding the primary rôle to the atopens just mentioned.

The rôle of bacteria in the causation of asthma is not well understood. Pulmonary or other infections may intensify the symptoms of which an asthmatic complains, but we feel that such infections have not been demonstrated to be a direct cause of asthma. The relief that often follows vaccine therapy is probably due to the alleviation of a concomitant infection, bronchitic or otherwise.

Much concerning the etiology of asthma is unknown. In many cases, even after diligent study, the etiologic factors cannot be determined, and therefore distinct relief of the symptoms cannot be obtained. We believe that for their successful demonstration newer methods of study must be evolved.

In the more recent work on asthma, it was quickly realized that the responsible agent or atopen, in most cases, was inhaled. This was known to be true of pollens and dandruffs. The atopen or specific substance was in the dust inhaled by the patient. If the patient failed to react to the known isolated atopens, it was thought that perhaps he would to the hypothetical atopens still remaining undiscovered in the dust in his environment. This was first demonstrated to be true by Cooke.[1] The search for the specific substances in the house dust which caused trouble, led to the isolation of many new atopens, such as those associated with rabbit hair, goat hair, pepper, et cetera. However, there still remain many patients who react to none of the specific isolated atopens but do react to the atopens in the heterogeneous mixture, house dust, and this fact has served as the basis of diagnosis and treatment of the group of cases I am about to report from the records of the Department of Applied Immunology at the Jefferson Hospital in Philadelphia. What factors still remain to be isolated from house dust, we do not know; but we hope to be able to report soon, the result of studies now going on.

The method we use in demonstrating hypersensitiveness in a patient is the intradermal injection of 1/100 to 1/50 c. cm. of an extract of the suspected substance. Positive reactions are indicated by the appearance of an urticarial wheal at the site of injection. We do not believe that the scratch method of Schloss or the use of extracts other than those made by the method of Coca[2] yield satisfactory results and this view is supported by the experiences of Brown,[3] Larsen Alexander and Paddock,[4] and Vander Veer.[5]

During the years 1921 and 1922, 338 cases presented themselves for atopic study at the Jefferson Hospital Clinic. Of these, 235 were proved asthmatics, and a tabulation of the atopens of etiologic importance in these cases is presented below. The asthmatics representing pure pollenoses were excluded.

Single sensitization,	96 cases,	40.9%
Danders,	14 cases,	5.96%
Horse,	3 cases,	1.27%
Cat,	2 cases,	0.85%
Dog,	1 case,	0.42%
Feathers,	8 cases,	3.4%
Orris,	4 cases,	1.70%
Cereals,	1 case,	0.42%
Pepper,	1 case,	0.42%
Egg,	1 case,	0.42%
Flaxseed,	1 case,	0.42%
House dust,	74 cases,	31.5%
Multiple sensitization,	74 cases,	31.46%
Danders,	52 cases,	22.11%
Horse,	14 cases,	5.96%
Cat,	8 cases,	3.40%
Dog,	7 cases,	2.97%
Feathers,	17 cases,	7.22%
Rabbit,	2 cases,	0.85%
Goat,	4 cases,	1.70%
Orris,	11 cases,	4.67%
Cereals,	18 cases,	7.66%
Pepper,	5 cases,	2.12%
Egg,	1 case,	0.42%
Pyrethrum,	3 cases,	1.27%
Tobacco,	5 cases,	2.12%
Flaxseed,	1 case,	0.42%
Mustard,	1 case,	0.42%
House dust,	60 cases,	25.5%
Not diagnosed,	65 cases,	27.63%
Insufficient observation,	46 cases,	19.56%
Failures,	19 cases,	8.07%
Total number of cases,	235 cases,	100%

Of the 235 cases studied, the relative unimportance of the food factor is emphasized. The atopens of dust, however, are seen to occur as the sole factor in 31.5% of cases, and in combination with other atopens in 25.5%. In 57% of our cases, therefore, the atopens of dust appeared to be a primary factor in causing asthma.

The dust extract used in testing was either stock or from the patient's own environment.

Stock dust extract was made of a mixture of a number of samples of dust, the extracts of which had yielded a marked skin reaction. Many patients, especially those that baffled us, were tested with extracts of dust from their own home or place of work. The dust was collected by broom or cleaner and extracted by the method of Coca[3] in buffered normal saline solution to which a preservative had been added and sterilized by Berkefeld filtration. In all, 61 individual dusts were tested. Of these, 6 were negative and 55 positive. In three of the negative cases, stock dust reactions were positive, and in 3 cases both individual and stock tests were negative. Of the 55 positive reactions obtained with extracts of dust from the patient's own environment, 42 equalled stock dust, 11 reacted more strongly than stock dust, and in 2, stock dust yielded the more marked reaction. It can be stated, then, that in the majority of cases a good stock dust extract yields as marked a reaction as an extract from the patient's surroundings.

The ideal treatment of a patient hypersensitive to house dust consists in the removal of the cause, namely, the offending dust. Though this is difficult of complete attainment, assiduous efforts are rewarded with proportionate relief. Measures to be employed include the removal or frequent cleansing of dust catching articles of furniture and floor covering. To supplement these efforts to remove the offending factor, hypodermic injections of house dust extract are given in an endeavor to hyposensitize the patient. The initial dose is 1/10 c. cm., and is increased 1/10 c. cm. weekly until a maximum of 1 c. cm. is reached. This dose, 1c. cm., is repeated at intervals of one week. As improvement occurs, longer intervals may be justified, for in some cases, monthly injections suffice to hold the patient hyposensitized and symptom free.

The results of treatment are briefly summarized as follows: All cases diagnosed as sensitive to atopens other than house dust showed improvement, if treatment was continuous. Twenty-one and seven-tenths per cent were symptom-free, 56.5% showed considerable improvement, and 21.7% slight improvement. These results are much more favorable than those obtained in the cases in which house dust, either alone or with other atopens, was involved. Of the dust cases that remained under treatment for a satisfactorily continuous period, 62% showed considerable improvement, 30% slight improvement, and 8% no change. It must be borne in mind that these figures exclude the 28% of undiagnosed cases. The percentage improved of the total number reporting to the clinic, including the undiagnosed, was 58.2%. However, we feel that we may justly exclude those cases that failed to remain under observation until diagnosed, or if diagnosed, were careless in attending the clinic. Persistence in treatment is necessary to accomplish the best results. The patience of all concerned is often taxed severely. Definite improvement may not occur for a month or two, while the maximum benefit may be deferred for several months. We have used in routine treatment the stock dust extract if it gave a good reaction. The use of an extract from the patient's own environment is indicated if the stock dust reaction is weak, if no positive reactions are obtained, and if treatment is not attended with good results. There is little to choose between stock extracts and those made of the dust in the patient's surroundings if both elicit equally marked reactions.

Supplemental treatment directed toward the removal of the secondary etiologic factors must be employed. Operative procedures to correct nasal pathology, vaccine therapy, removal of foci of infection, and incidental medical care, are measures to be utilized when indicated, and their judicious application is often attended with gratifying results.

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255 South 16th Street.

THE MANAGEMENT OF HETEROPHORIA*

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The methods pursued in securing the results upon which this paper is based were as follows: Up until 10 years ago, in individuals under 30 years of age all refraction determinations were made under atropin cycloplegia; between this age and 48 years homatropin cycloplegia. In the last 10 years homatropin has been more generally employed in individuals over 20 years of age. The muscle balance was tested before, during and after the cycloplegia. The final test was made two weeks after recovery of accommodation, with accurately fitting frames carrying the correcting lenses. The test at infinity was made with a colored Maddox rod and a centimeter disc of light; that for finite (reading distance) with Maddox rod and an illuminated 1 mm. aperture in a hand screen, prisms being used to measure the deviation.

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Duction was tested with loose prisms mostly, but in some instances adduction was estimated by using a rotary prism, the strength of the prism being increased while the eye before which the prism was placed was momentarily screened. This is something of a time-saver. Convergence near point was found by approaching a fine pointed instrument in the median line until the point doubled, the measurement was made from the anterior principal plane, 13 mm. from the cornea. Except where existing ocular conditions precluded, these tests, with the exception of supra- and infraduction, were made and recorded in all cases, for the past 30 years or more.

Keenness of observation is not a common faculty in our patients and while the recognition of two bright lights side by side would seem quite simple, the frequency with which the second image produced by a prism is overlooked may lead to an error in determining the ducting power of the eyes. Repeatedly I have to check up by revolving the prism 15° to 30° so as to throw one image higher than the other, when it is at once seen. Fusion does not occur when they are again brought in the same plane, demonstrating that the diplopia had been overlooked in the beginning.

Fusion in adduction can be most quickly brought about by directing the patient to blink the eyes a few times, when the two images which seemed to be fixed, usually to the astonishment of the patient, quickly merge.

In my experience abduction averages 6½°. Only in cases of divergence excess does it go above this. Adduction, except in cases of convergence excess, rarely goes above 20° at first trial, but in most cases can be brought up to 45° with a little practice unless there is a marked convergence insufficiency. The estimation of the near point of convergence gives information of much greater importance than the determining of adducting power. Occasionally there is no relation between the near point of convergence and the adduction.

Supra- and infraduction, except where there is a degree or more of hyper- or hypophoria, is about 2°. A vertical phoria of more than 2° (4%) is unusual. In most cases it is less than 1°, or 78%.

Are we to take the view of Landolt that phorias are far from always pathologic and do not necessarily constitute a tendency to deviation but show the position in which the eyes would deviate if they were no longer able to fix binocularly, or the view that they are more often the expression of a disturbance between accommodation and convergence due to ametropia in eyes in which fusion is strong but out of which an actual deviation may develop when some factor is added which renders fusion more difficult? The latter view seems to be upheld by the association of a certain deviation with those refraction anomalies, which offers a rational explanation for the association, such as esophoria with hyperopia, and exophoria for near with myopia; by the fact that actual deviations result from these tendencies toward deviation, and by the effect on the imbalance produced by the correction of the error of refraction.

Other factors which must be considered as influencing the production of phorias, are convergence and divergence insufficiency and excess, subnormal innervation to the muscles, subnormal muscle development and anatomic insertional anomalies.

As illustrating the part played by disturbance of the relation between accommodation and convergence, may be noted esophoria which may either be reduced or converted into an exophoria by correction of the coëxisting hyperopia. As illustrating the rôle played by convergence and divergence insufficiency or excess, are cases in which heterophorias become converted into heterotropias. Examples of anatomic muscular defects are cases of heterophoria in which the tropometer, or the field of fixation, shows limitation in one or more of the cardinal directions.

In most cases (90%) that come to us because of eyestrain heterophoria is present. Occasionally there is orthophoria for distance, rarely for near. Irrespective of the nature of the ametropia, the imbalance found is usually a low degree esophoria for distance associated with an exophoria of varying degree for near. In myopia there is either an exophoria or esophoria for distance and an exophoria for near. In hyperopia the imbalance for distance also varies; rarely there is exophoria or more often a low degree esophoria. For near there is usually a low degree exophoria and occasionally esophoria.

The above are generalized statements that need modification according to the age of the patient and the degree of ametropia of the two eyes.

The degree of imbalance of the muscles for far and near means little; it is only when it is considered in connection with the refraction, the state of convergence and divergence, that we obtain the necessary data for treatment. Underlying the whole problem of the treatment of heterophoria is the proper estimation and treatment of the refraction anomaly present. Some otherwise sound ophthalmologists claim to be able to determine static refraction, even in the young, without the aid of cycloplegics; but refraction so estimated cannot be considered as properly done. Cycloplegics are still indispensable for the doing of good refraction and the more thoroughly they are used the less frequently will it be necessary to take the muscle error into account.

Having determined the refraction anomaly, the glass to be prescribed will be based upon the accompanying relation between convergence and divergence.

In cases of hyperopia with convergence insufficiency, by undercorrecting the hyperopia an accommodative power is brought into play, in near work, in excess of the amount required in emmetropia. With this excess stimulation of accommodation there will be associated a corresponding excess of stimulation of convergence. The amount of undercorrection should be as great as is consistent with the age of the patient and the work to which the eyes are put.

In cases of hyperopia with convergence excess, convergence should be relieved by calling into action as little accommodation as possible, and this is accomplished by fully correcting the hyperopia. In some instances a full correction should be ordered for distance and an overcorrection in the form of a bifocal for near work.

In cases of hyperopia with divergence insufficiency—esophoria for distance in excess of that for near—nothing is gained by under- or overcorrecting the hyperopia, and if the condition is producing symptoms, relief may sometimes be secured by combining weak prisms with the correction for distance wear, and omitting them in the near glasses.

Hyperopia with divergence excess—exophoria for distance and a less amount, or even ortho- or esophoria for near—is rare and calls for no special modification of the refraction glass.

In myopia with convergence insufficiency—the usually associated conditions—other things being equal, the myopia should be fully corrected so as to stimulate convergence through the accommodation.

Divergence excess alone with myopia is rare, this condition usually developing from the convergence insufficiency. Full correction alone, or with a prism somewhat less in degree than the exophoria present for distance, will often give relief. Where with myopic error of refraction there is convergence excess—a rare condition—a partial correction of the myopia is indicated.

Should there be too great a disturbance between divergence and convergence to be relieved by modification of the glass required to correct the refraction error, or should the vertical deviation be considerable, we must next resort to methods by which the functioning of these faculties can be improved, or relieved somewhat of their work. Of these, improvement in innervation of convergence and divergence by prism exercise is to be first attempted.

There are two conditions in which improvement may be expected from prism exercise and prisms: First in convergence insufficiency before divergence excess begins to develop, that is cases showing orthophoria or a low degree of esophoria or exophoria for distance, with exophoria of from 5° to 12° or perhaps a little more, with fair convergence power. Here prism exercise for strengthening adduction often relieves the muscular asthenopia. The method adopted is to start the patient by practice pursued in the office until an adduction of 15° to 20° is reached, and then prescribe the necessary prisms and frames for home exercise. Printed instructions are provided, and an effort is made to bring adduction up to 60° although it often falls short of this. If improvement follows after a month's practice the patient is instructed to purchase 2° to 20° prisms and use them whenever there is a return of the symptoms. To these exercises are added convergence exercises with a pen carried toward the eyes in the median line. During the period over which the exercise is being used, testing often shows that the visual axes have been rendered more convergent than they were, a low exophoria becomes converted into an esophoria, or an esophoria becomes increased. This result is not attained in every case nor is it permanent in any. Nevertheless symptomatic improvement often follows. Where there are several degrees of exophoria for distance and a high degree for near, prism exercise usually fails. The disturbance between convergence and accommodation occasioned by the correction of hyperopia in patients over 35 years of age, or in presbyopia at a later period—and manifesting itself in the development of an exophoria at near distance—may often be relieved by adducting prism exercise. Prisms, base in, will also afford relief.

Prisms have a limited field of usefulness. They are of service in cases of pure convergence insufficiency, when worn for near work, and may in some cases of convergence insufficiency with divergence excess, be given for constant wear. In insufficiency of convergence which develops when hyperopia is corrected for the first time past middle life, or when presbyopia has developed, weak prisms, bases in, will often render the eye more comfortable for near work, but prism exercise should first be tried. When, after a hard day's use of the eyes, night work seems impossible, a pair of glasses with weak prisms, with bases in, incorporated often permits further use of the eyes with comfort. Occasionally in esophoria with divergence insufficiency—that is, where the esophoria is greater for distance than for near—prisms, bases out, to be worn constantly, are helpful.

In hyperphoria of over 2°—an unusual condition—prisms correcting all but 1° should be ordered for constant wear. Over 5° can best be treated by tenotomy.

Operations should be limited to cases unrelieved by glasses and prism exercises. In cases of simple convergence insufficiency a small tuck operation, such as the Savage-Valk operation, may be done. In divergence excess, tenotomy of the externus usually gives relief, but is often followed by diplopia in extreme lateral rotations, but this is soon ignored. While in convergence excess a tenotomy is theoretically proper, it is better not to cut the internus but to do a Savage-Valk tuck operation on the externus.

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DISCUSSION

Dr. William W. Blair (Pittsburgh, Pa.): There is so much in Dr. Zentmayer's paper, that it would be profitable to extend the same in a formal discussion. However, I will venture to touch on only a few points, chiefly by way of emphasis.

Notwithstanding the work of the earlier writers on refraction and kindred errors, it was not until Landolt, Maddox, Stevens and Savage began to tell us about heterophoria, more than a quarter of a century ago that practicing ophthalmic surgeons began to get a true conception of the importance of the part played by muscle imbalance in the causation of so-called eyestrain. Since those days when the very nomenclature had to be coined, books, pamphlets and essays have appeared in a constant procession, covering every phase of the subject.

In the light of this, it might seem strange that one should find it necessary to urge the importance, or rather the *necessity* of carrying out a complete investigation of the muscle status of every patient, who is examined with the view of fitting glasses. That this is not done as a regular, unfailing routine by a large number of men engaged in the practice of ophthalmology, I am convinced.

Dr. Briggs, of Asheville, in a paper read before the A. M. A. in 1922, states that "It is his belief that there are many students well-grounded in ophthalmology, having a good working knowledge of muscle balance, who, excepting in cases of very apparent cases of asthenopia of muscular origin, seldom utilize the tests for heterophoria."

One wonders how this condition could come. I have sometimes thought that those of us, who are trying to teach the rudiments of the science and art of refraction are at fault. Do we present the subject in such a manner as to render a perception of the intimate relationship between muscular anomalies and refraction anomalies inescapable? Perhaps not. The textbook separates these subjects into different chapters, so that we should not blame the reader when he fails to see the connection.

The act of binocular singular vision is so involved and complicated that few can be said to understand it entirely. Consequently many theories have been evolved in its elucidation, all of which have weak places. However, until more is known, it is a safe working rule to assume that most cases of muscle imbalance are traceable to uncorrected errors of refraction, and, furthermore, constantly to keep in mind the fact that, in the presence of a muscle error, we are not in position intelligently to prescribe lenses for the correction of the refractive error, until we have thoroughly worked out the status of the muscle balance.

It was Maddox who said that "the most important moment of a refraction consultation is that in which we deliberate what reading lens to order," and I am convinced that a wise decision can be made only when one has definitely determined the state of the muscle balance. Just what use shall be made of our knowledge of the state of the muscles would make another chapter. Manifestly, however, this information must guide us in the selection of lenses both for close and distance use, if we find it unnecessary to go further.

I am quite in accord with the author in his attitude concerning the ordering of prisms for constant wear in cases of lateral heterophoria, reserving such for especially selected cases, and prescribing them only after the other indicated means of relief have been tried.

In the estimation of vertical errors, I have found the use of the so-called *occlusion test* to be of great service in bringing out the entire amount of error present. Since this test seems to be not so generally employed as it deserves to be, it might not be out of place to describe a technique which has given me satisfactory results.

I was led to the use of this test some years ago, through the observation, which I am sure all have made, viz., that a given case of hyperphoria of moderate amount (for example 2°) will frequently, after wearing a vertical prism for a week or more, show an increase in amount of error of perhaps a full degree. Then, if this additional degree is corrected, the further lapse of time will show further increase, and so on, each slight correction being followed in time by an apparent increase in the amount of error until the hyperphoria stands at 6° or even 8°.

With the occlusion test the entire amount of error can be disclosed in three or four days. It is not difficult if carried out in this way. As soon as a considerable amount of hyperphoria has been demonstrated, the patient's correcting lenses (i. e., those correcting his refractive error) are mounted in a well fitting spectacle frame. One glass is then covered with black paper, which can easily be pasted over the anterion surface of the glass. The patient is dismissed for twenty-four hours with the strictest injunctions that the glasses must not be removed for any purpose whatever *while the eyes are open.* If the rationale of the procedure is fully explained to the patient it is quite remarkable how successfully it can be carried out.

Formerly, I used Worth's method of closing the one eye by a patch held in place by plaster, but I am sure that the method just described is quite as efficient and is certainly less annoying to the patient.

After twenty-four hours have passed, the patient is placed 6 m. from the one cm. light in a darkened room, the Maddox rod is placed in the trial frame or phorometer, and when all is in readiness, the patient is directed to look with both eyes and the deviation is measured in the usual manner. If the amount shown is higher than was indicated on the previous day, the cover is reapplied for a second twenty-four hour period. (Sometimes the patient will wish to have the cover shifted to the other eye, just for a change. This is perfectly feasible, and may be done.)

In the manner described, the patient is prevented from using both eyes at the same time, thus inhibiting his impulse to blend the two images, and sometimes a surprising amount of error can be demonstrated.

I know it has been asked, what is the use of demonstrating these high degrees of vertical deviation, since the amount of correction that will be tolerated is comparatively small. The reply is, that just as a cycloplegic will sometimes disclose an amount of refractive error quite beyond what we have suspected, so will the method of occlusion give us the total amount of the error, which is then to be undercorrected or fully corrected, as may be decided by the ophthalmologist. And it seems to me, that to proceed without full knowledge of the amount of muscle error is following in the path of the "otherwise sound" ophthalmologist, who attempts to measure errors of refraction without the use of a cycloplegic.

Dr. Zentmayer (in closing): I have never used the Marlow cover test, and while it appeals to me somewhat, I am not sure that it brings out the real condition that requires correction.

I cannot agree with Dr. Blair that we frequently see cases where vertical prisms bring out a latent hyperphoria. In my experience there has been very little increase in the vertical error.

THE ROLE OF NUTRITION IN THE ETIOLOGY, COURSE AND PREVENTION OF MENTAL DISORDERS*

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One cannot be actively engaged in the treatment of the psychoses for many years without being struck with the great frequency of a state of lowered nutrition in the development of acute mental disorders. In one hundred consecutive admissions of cases belonging to the presumably curable mental disorders, at the Mercer Sanitarium, only eleven measured up to or exceeded the normal standard weights for sex and height. As eighty-five per cent of these cases gave a history of recent loss of weight, it is evident that there was a close relationship between the development of the psychosis and the impaired nutrition.

The mechanism of the production of this lowered state of nutrition must vary considerably. A considerable number of these people have, from the history, evidently been undernourished always or for many years. Then, under the influence of some unusual emotional stress, such as the loss of a near relative or financial misfortune, the individual stops eating, doesn't sleep, the weight drops rapidly and thus the already slender margin of nutritional safety is quickly exhausted. If there is added to this situation a poor hereditary endowment, conditions are ripe for the onset of an acute psychosis. The lowered state of nutrition reacts further to intensify the original emotional stress and sooner or later the patient drifts into a real mental disturbance. Then again, in other cases, a serious impairment of nutrition has taken place as a result of prolonged wasting illness or the childbearing process and hence may be considered the direct predisposing cause for the development of the psychosis. It is of course apparent that in all of these cases there must be, in addition to a lower state of mental resistance as a result of starvation of the tissues, also a large toxic element due to altered nutritive processes and, in some cases, to the direct action of bacterial toxins on the brain cells.

Higgins[1] states that there is experimental evidence to indicate that undernutrition in itself does have an effect on the personality. A group of students, on a low caloric diet, did quite as well scholastically as a control group. There was noted however "dissatisfaction, irritability and physical inactivity."

In the careful study made of Levanzin, who fasted for 31 days in 1912, it was found that while his intellectual processes *per se* were not demonstrably affected, he was obviously under great mental strain throughout his fast. This manifested itself by "periods of depression and irritability, alternating with periods of enthusiasm and elation," especially as he realized his fast was nearing an end. "Hysterical manifestations to the point of mental unbalance" occurred after the fast but were thought to be due in part to abdominal discomfort as the result of taking food.

That fasting has a very definite effect on certain activities of the nervous system is indicated by the fact that in Levanzin's case the patellar, Achilles and abdominal reflexes all gradually diminished until on the eleventh day they could no longer be elicited.

Where undernutrition is present, acidosis is often an added toxic factor. Higgins states that after the third day of fasting acetone bodies are formed. In complete starvation with no water intake, a larger acetone body accumulation occurs, and sometimes acidosis, as excretion of the acetone bodies is interfered with. In undernutrition, where the carbohydrate intake is less than 50 gm. daily, acetone bodies will usually appear in the urine.

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Many clinical observers, notably Drs. S. Weir Mitchell[2] and Dr. Lawrence Litchfield,[3] have emphasized the importance of a proper amount of adipose tissue as indicated by a normal weight, if the nervous equilibrium is to be maintained in the presence of strain and stress. Modern studies in metabolism would seem to give us certain indications as to why this is true, though the chemistry of the nervous system is still little understood. We know, for instance, that while fats themselves probably do not take part in life processes, they are readily changed into certain intermediate bodies, the phosphatids, which are among the most reactive substances found in living beings (Bloor[4]).

Now the brain as a tissue is characterized by its very high lipoid content, it being equal to the protein content in the adult brain. Chief among these is cephalin, one of the phosphatids. Prominent among the lipoids in the blood are the phosphatids which are in turn derived from the blood fats. The fats in the blood are derived from the alimentary fats ordinarily, but if a condition of starvation exists and no alimentary fats are ingested, the stored fats of the body are mobilized in the liver and utilized actively. But if there is no such store of reserve fat in the tissues from which to draw, it must inevitably result in a deficient supply of one of the important constituents of brain tissue and hence, sooner or later, in a disturbance of function. Brain cells contain phosphatids (cephalins and lecithins) in large amounts and if these constituents are not available it is impossible that the cell should function normally.

If we grant that a lowered state of nutrition is, in part at least, responsible for the development of many cases of the acute psychoses, then one should expect mental improvement to take place when an improved state of nutrition as manifested by a gain in body weight occurs. A study of cases from this angle shows this to be true. Upon examining the records of one hundred consecutive cases of the potentially curable psychoses in respect to gain in body weight and mental results, the following facts were developed: Of the seventy-two cases who gained weight during treatment, all but one were discharged as restored or improved. Of the remaining twenty-eight who either didn't gain or lost weight, only three were discharged as restored, eight as improved, while seventeen or sixty per cent were unimproved. It is only fair to say that many in the second group were under treatment only a short time, perhaps a month or six weeks, and no doubt eventually did gain in weight and did improve mentally. The fact remains, however, that so long as no gain in weight took place there was no mental gain in most instances.

It may be argued that it is impossible to state whether the gain in weight precedes or follows the mental improvement. A close study of individual cases, however, would seem to indicate that in most or many cases the intake of foods and liquids must be made adequate before mental improvement can take place. The following cases serve to illustrate this point:

Case 1.—Mr. R., age 58, diagnosis involutional melancholia. On admission was depressed, apathetic, had visceral delusions. Ate very poorly, lost 14 lbs. in 3 weeks. Was tube-fed at this time with the result that he ate better for a time and no further loss of weight occurred for five weeks. Then in the next two weeks he lost six pounds, the loss of weight being accompanied by unfavorable mental symptoms, such as soiling his clothes and bed. At this point in his treatment several male nurses were sent into his room one day at meal time and stood over him until he had eaten everything on his tray. After this had been repeated a few times, he began to eat spontaneously and started a gain in weight which has continued, with a few slight recessions, ever since. *Pari passu* with this gain in weight, there has been definite mental improvement, so that now the patient is nearly normal.

Case 2.—Mr. S., age 62, a case of involutional melancholia. This man had poverty delusions and delusions of demoniacal possession, but was not of the agitated type. For the first thirteen weeks he was allowed to go to the table and regulate for himself his food intake. At the end of this time he had gained only two pounds and was little if any better mentally. It being realized that, as the patient was underweight, the chief difficulty was probably with food intake, he was made to eat in his room from a tray under the eye of a nurse. On this régime he began to gain weight at once and at the same time there was a noticeable mental improvement. After 12 weeks of this closely supervised eating he was so much improved mentally that he could be safely allowed to regulate his own food intake.

Case 3.—Mr. V., age 58, a case of involutional melancholia. This man was very restless and agitated from the time of admission. Was also delusional, thought certain nurses were detectives watching him, etc. At the end of ten weeks treatment, in spite of nourishment between meals and at bedtime he had lost five pounds and was worse mentally than on admission. His nurse was then instructed to compel him, by force if necessary, to eat everything on his tray unless excused by the physician. In the next 13 weeks he gained twelve pounds with concomitant mental improvement, his delusions disappeared, his agitation grew less and he was soon convalescent.

The relationship in these cases between the increased food intake, the gain in weight and the mental improvement was so definite and striking that it was plainly more than a *post hoc* affair. There may be other types of cases where the reverse is true, but these must be decidedly in the minority.

If the foregoing contentions are true, it follows that one of the important features of any mental hygiene program should be a proper education of the public as to the importance of the maintenance of a proper state of body weight, especially in those with a neuropathic heredity. Much emphasis has been laid in recent years upon child nutrition and very properly, but perhaps too little has been said in relation to the adult's state of nutrition, except to warn against the evils of overweight. Women are the worst offenders against the laws of nature in this respect as many of them try, by systematic starvation, to develop a thin angular figure, carefully eliminating all of the curves that indicate the presence of adipose tissue. They eventually lose all appetite because of the effect of undernutrition upon the desire for food and become fair prospects for a mental or nervous break under any unusual strain or stress.

Frequently cases who have passed through a psychosis and recovered can be kept well indefinitely by careful attention to general hygiene and by not allowing the body weight to fall below a certain point. I can recall cases where careful watching by the physician and friends as to this matter of nutrition and giving forced feeding to cases where there were danger signals displayed has served to keep well patients who, I am sure, would otherwise have succumbed to later mental attacks.

Dr. Litchfield, in one of his papers, refers to the striking resemblance, occasionally, between severe cases of undernutrition and malignancy. I would like, in closing, to record a case of this type, which is unique in my experience.

Miss K., age 22, a former college student, admitted in May, 1915. The history was that she had complained of stomach trouble for years, had tried this diet and that, each time cutting off something in the way of nourishing food until she had become hopelessly weak and bedridden. On admission she was found to be a girl of average height and frame, but so extremely emaciated that she at first glance resembled an advanced case of tuberculosis or malignancy. She weighed just fifty pounds. As physical examination revealed that all her organs were sound and that she was simply starved, she was put first on a low caloric liquid diet which was gradually increased as stomach toleration permitted till she was taking forced feeding. In four months she weighed 102 pounds and thus had doubled her weight. She was fully convalescent as to her nervous symptoms which were mild and only those of a psychoneurotic and was allowed to return home. She had become so impressed with the importance of a generous food intake and the fact that she was not yet up to a proper weight for one of her build, that she continued her diet after reaching home and at the end of six months more she weighed 150 pounds and was enjoying excellent health. Thus she had tripled her weight in less than a year.

This is the most striking case of nutritional change in my experience and shows how wonderful are the assimilative powers of the human system, given a person without organic disease of any kind. I believe there are very few thin people who cannot be fattened, if no organic disease is present, provided there is a proper study made of all the nutritional factors in the case and the patient can be made to live an otherwise reasonably hygienic life. If we all would only persistently and systematically preach the importance of a proper state of nutrition to all our patients, the sanitaria and other institutions for nervous wrecks would suffer a considerable loss of patronage and the modern mental hygiene movement be given a decided impetus.

SUMMARY

In a study of a group of presumably curable mental cases, seventy-five per cent gave a history of recent loss of weight. Eighty-five per cent were below normal standard weight on admission.

A lowered state of nutrition and starvation do often affect the mentality, but chiefly in the emotional sphere.

Modern metabolism studies serve to emphasize the importance of fat derivatives in the structure of brain tissue. Hence, fat starvation and a great diminution of the stored fats in the tissues cannot fail to affect brain function in some degree.

Case studies indicate that a gain in weight must be produced in at least certain mental cases before mental improvement can occur. This is probably true in most cases.

An unusual case is reported in which an emaciated woman tripled her weight within one year. The importance to mental hygiene of a proper insistence on a normal state of body nutrition is emphasized.

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DISCUSSION

Dr. George J. Wright (Pittsburgh, Pa.): There is no doubt that this matter of weight in connection with nervous affections is very important. It applies not only to psychoneuroses, as was indicated many years ago by S. Weir Mitchell in his plan of rest cures, but particularly to the psychotic cases, for, I believe, a different reason. In the psychotic cases the patient loses weight for a number of reasons, especially in the depressed cases and the toxic exhaustion cases, the reasons being sleeplessness, anxiety, the mental tension, tremendous agitation sometimes, and sometimes also because of very specific delusions about the food, about the nature of the food, and also about the condition of the gastro-intestinal apparatus. So in psychotic cases of the depressed type you are constantly facing a real danger of a physical sort brought over from the mental side. These dangers are that the loss of weight may be so severe that a fatal acidosis may occur, or that the patient may starve himself. So anyone who has contact with a group of cases of this sort is constantly on his mettle and he must not wait for these things to happen before instituting the necessary measures to prevent them. Dr. Richardson has for some time been giving particular attention to this special type of problem, and very justly so.

I cannot say whether or not the increase in weight is a sign that food alone is producing a corresponding change in the mental condition of the patient. I feel that the fact that the weight is beginning to increase is due to a changed attitude on the part of the patient, at least in part. That is, his delusions are becoming less fixed and there is less mental tension, less depression and so on. It is a pretty hard matter to say whether or not the mere putting in of food has been assisting in the recovery or whether or not the increase of weight and increase of food intake is not an index of what is going on in the patient's mind. I feel myself that when a patient begins to eat more and take on weight that patient is beginning to gain, but I have not had the courage to blame it all on the food. This problem is something that is always before us, something that we always have to pay a great deal of attention to, and I think Dr. Richardson's emphasis on this matter is of a very practical sort.

Touching on the biochemistry of fat and the relationship of fat to the chemistry of the brain cells is interesting and I wonder how much we can take out of that. We know that years ago, and perhaps even now, it was the fashion to give phosphates in some form in nervous disorders, on the assumption that phosphates were a part of the nervous organism and that in some forms of disorder phosphates were eliminated and should be replaced. We now know that that is quite futile and that other things are more important in the treatment of such cases.

Dr. Clifford B. Farr (Philadelphia, Pa.): Dr. Richardson's paper was of great interest to me because those of us who have worked in mental hospitals have made similar observations. In order to discuss his paper more intelligently I looked over the last fifty mental cases discharged from the Pennsylvania Hospital, taken consecutively without any selection. Of these I took forty concerning which I had sufficiently full data and put down the percentage over or below the ordinary insurance weight (as related to age, sex and weight), and found that thirty patients were underweight on admission. Referring to the chart you observe that some of these patients gained as much as fifty-one pounds and, furthermore, that of the ten who gained from nine to fifty-one pounds, five recovered and two were much improved. In the second group of ten in which the gain ranged from two to seven pounds, three recovered and two were much improved. In a third group of ten showing no gain or a loss of weight up to twelve pounds, none recovered and only one was much improved. On the other hand, in ten patients who were overweight by the same insurance standard, two showed great loss of weight (thirty to thirty-six pounds respectively); nevertheless, one recovered and one improved. The ten cases in which data as to height and weight were insufficient, at least showed no striking disturbance of nutrition.

It is observed that gain or loss of weight is only a symptom and taken without reference to the type of psychosis might mean little. As it happens, however, these cases were distributed among the various psychoses, psychoneuroses, toxic-infectious cases, dementia præcox, and so on. One dementia præcox case gained weight but did not improve.

Dr. Lueders and I made the functional gastro-intestinal studies in nearly 100 psychotic cases, fifty of which we analyzed, and found that a large number of mentally depressed cases had also depression of gastric secretion. In some this may have been organic in origin, but in many instances it seemed to us to be psychic. One patient with achylia gained thirty pounds and made a good recovery. Some months before a distinguished internist thought that she was probably suffering from malignant disease of the stomach.

Many mental patients have idiosyncrasies or delusions in regard to their food, some have organic disease interfering with nutrition, and some refuse food altogether. I think it is very important to see that patients requiring involuntary or tube feeding get the proper number of calories, a sufficient variety of proteins, adequate vitamines, etc. So whether we accept Dr. Richardson's idea that the gain in weight is primary or not, and personally, I believe that it is primary in some and secondary in others, at any rate it is very important to overcome the state of undernutrition. We thus are able in any case to carry out the old therapeutic principle of breaking the "vicious."

THE TREATMENT OF EPIDEMIC ENCEPHALITIS*†

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Since epidemic encephalitis became prevalent in 1918 and especially in 1919 in this country a tremendous amount has been written about the disease; however, when one looks over the literature on this condition he is struck by the paucity of papers and remarks in general directed toward the treatment of the disease. It is chiefly because of this and encouraged by a request of the Secretary of the Section, that I desire to make a few remarks on the treatment of epidemic encephalitis, although it is fully realized that there is nothing new or startling to be said.

It is natural to divide the discussion of the treatment of encephalitis into two parts; the first dealing with the management of the acute stage and the second with that of the sequelæ. In the acute stage of encephalitis the symptoms and physical signs of the disease have varied greatly, each year apparently bringing forth a new condition; the lethargic type, myoclonic variety, epidemic hiccough, polyneuritic group, psychoses and the poliomyelitic syndrome being a few of the protean manifestations of this malady. It is obvious that unless there be a specific for the disease that different types call for different lines of management. It is unfortunate that to date no method of treatment which is infallible in its curability has been found.

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Rosenow[1] has contributed an article on the "Specific Serum Treatment of Epidemic Encephalitis—Further Results." As is generally known, Rosenow has isolated a streptococcus from the tonsils, teeth and nasopharynx of patients suffering from encephalitis and with this streptococcus he has reproduced the symptoms and lesions in animals, the disease in the experimental animal often resembling that existing in the patient from whom the streptococcus was isolated. Rosenow believes it is possible that this organism is closely allied to that decribed by Loewe and Strauss, by Thalhimer and by Maggiore and Sindoni. The serum used in the twenty-one cases reported by Rosenow was a mixture of a serum from two horses injected with four strains of the streptococcus. One of the strains was isolated from the throat of a patient suffering with the lethargic type of the disease, one from the spinal fluid of the meningeal form, one from the throat of a patient ill with epidemic hiccough and one from the medulla in a rapidly fatal case.

The method of injection employed by Rosenow was through the intravenous and intramuscular routes, the intraspinal injections being infrequently used. After desensitization he advises that ten to twenty c. c. of the serum should be given intramuscularly and that these injections should be followed by from twenty to forty c. c. either intravenously or intramuscularly at twelve to twenty-four hour intervals, providing no reaction followed the first injection. He thinks it best to give intraspinal injections to patients with high cell counts in the cerebrospinal fluid. If good results are obtained the injections should be continued from five to eight days; if good effects are not obtained after three or four injections the serum treatment should be discontinued. Rosenow claims that beneficial effects were manifested by improvement, depending on the type of the disease. For example, he states —"Lethargic patients became more wakeful, semicomatose patients became conscious, highly excited, restless, delirious and in a few instances maniacal patients became more quiet and rational; choreiform movements and myoclonic contractions became less marked and less frequent: tremors, rigidity and the masked expression in certain Parkinsonian cases diminished." If all of these things are so, Rosenow certainly has a specific for epidemic encephalitis, but final judgment in this matter should be withheld until more returns are in. Before the publication of Rosenow's last paper he, in collaboration with Helmholz[2], had made what might be considered a preliminary report to Rosenow's paper.

Colin Russel,[3] of McGill University, believes that he has obtained good results in the treatment of encephalitis with the use of horse serum. At first he used diphtheria antitoxin, but after his initial case be became convinced that the antitoxin had nothing to do with the beneficial results obtained, and thereafter straight horse serum was used. Of the seven patients to whom horse serum was given by Russel five showed definite improvement and in the other two no beneficial results were obtained.

Herrick[4] reported a case of epidemic encephalitis which showed marked improvement after the use of antimeningococcic serum, the serum being used both intraspinally and intravenously.

With such excellent men as Rosenow, Helmholz, Colin Russel and Herrick reporting good results from the use of serum in the treatment of epidemic encephalitis it seems to me it would be proper to follow out this line of treatment in some cases.

It would seem that in the treatment of the acute manifestations of epidemic encephalitis, the most important thing by far is good nursing combined with the intelligent use of an occasional drug which has a definite indication for its use. I might state at this point that I have never seen any benefit whatsoever obtained from the use of arsenical preparations.

A sufferer from encephalitis, of course, should be confined to bed and enough nourishment should be given if possible to maintain body weight, and as in all acute infectious diseases the fluid intake should be kept high. A continuous warm bath or hot packs often aid in relieving excitement, diminishing muscular contractions and in promoting sleep. Luminal and hyoscin in appropriate doses sometimes aid greatly in controlling the excitement, insomnia and the myoclonic movements. The production of subcutaneous abscesses by the injection of turpentine, subcutaneous injections of the patient's spinal fluid and intraspinal injections of the patient's own blood serum have been advised by various authors, but in the opinion of the writer these forms of treatment have little or no merit. In view of the fact that the illness is often a long and protracted one, an air or water bed will often prevent the occurrence of bed sores and for this reason should be used. If any case presents a flaccid palsy due to involvement of the anterior horns or of the peripheral nerves, splints or appliances should be used to take the weight and pull off the paralyzed muscles.

Whether or not spinal drainage is advisable in this disease is a question. Because of diagnostic difficulties a lumbar puncture is frequently necessary; if when the spine is tapped the fluid is discovered to be clear, only enough should be removed to permit of the necesssary laboratory examinations, and after this no further puncture should be done because the lowering of intraspinal pressure may produce a dissemination of the disease throughout the brain and cord. This point was particularly stressed by Spiller[5] and by Dercum[6] in a discussion of the subject before the Philadelphia Neurological Society. Furthermore, it had previously been shown by Ayer that in the presence of a blood stream infection spinal drainage rendered the patient more liable to meningitis. A possible exception to this opinion regarding spinal drainage in encephalitis may exist in that type of the disease in which meningeal symptoms predominate and in which high cell counts are found.

In the treatment of the sequelæ of the disease, of which the Parkinsonian syndrome is by far the most common, I have usually been doomed to disappointment because no treatment of which I am aware seems to have much influence in stopping the tendency of the patient to a downhill course. Massage, hydrotherapy and passive movements apparently do more good than anything else. Luminal and hyoscin either alone or in combination frequently lessen the tremor, decrease the rigidity and make the patient feel better. Sicard and Rodriguez advise the use of sodium cacodylate in large doses, but in my hands this line of treatment has produced no good results.

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1909 Chestnut St.

X-RAY STUDIES OF THE CHEST IN INFANTS AND CHILDREN*

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The x-ray examination of the chest of the infant and young child is beset with many difficulties not encountered in connection with the adult. Satisfactory adult chest studies require a complete coöperation on the part of the patient, which is entirely lacking in infancy and frequently so in early childhood. Interpretation of findings is far more difficult in early life for anatomical and pathological reasons. The anatomical difficulties encountered in the very young are mainly the relative preponderance of the mediastinal shadow, the comparatively small area of lung and the closeness of the ribs. The hilum shadows are relatively extensive, and gland shadows of a size that must perhaps be regarded seriously would hardly be apt to attract attention in an adult. The intrathoracic pathological conditions of infancy and early childhood are quite different in many respects, mainly through the frequency of acute infectious fevers and the relative infrequency of neoplastic and cardiovascular conditions; and some diseases, like tuberculosis, present quite different manifestations in the two ages. These differences and difficulties grow less as the child approaches the age of puberty.

It is unnecessary to enter into any of the details concerning the technic of the examination. The entire procedure of examination may be summed up in the general statements that diagnostic precision requires just as careful work and just as fine detail of radiographs as in the study of adult chests and the necessity for speed is even greater because of the inability to control patients lacking in powers of understanding and reasoning.

Diagnostic ability must be based upon extensive experience in the interpretation of normal radiographic appearances and such changes induced by pathological processes as have been satisfactorily proven correct, either by being in perfect accord with clinical findings, by fitting in with subsequent developments in the cases or by autopsy. Self-satisfaction in the accuracy of interpretations not otherwise proven correct is a very inefficient factor in the training of one's ability. The best training for a knowledge of the normal and its variations is a study of an extensive group of chests of clinically proven normal individuals, rather than reliance upon the experience gained from the large proportion of chests that are roentgenologically diagnosed as "negative."

It still seems necessary to repeat the statement that correlation of clinical data and x-ray findings is essential in order that the best interests of the patient may be served. The x-ray examination of the chest must always be regarded as an additional method to be employed in conjunction with the older clinical procedures, and to be employed when the findings by the latter methods require confirmatory evidence or are uncertain. Radiography of the chest is not necessarily a routine procedure. While the diagnosis by roentgenologic means is frequently self-evident, this is by no means the rule, and an x-ray examination of the thorax should never supersede a careful clinical study. Apparently correct clinical findings and x-ray interpretations should agree, at least theoretically, and if they do not, neither clinician nor roentgenologist should assume that the other is wrong, but both should endeavor to determine the reason for disagreement and in so doing the correct results are more likely to follow and valuable experience is gained.

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A brief knowledge on the part of the roentgenologist of the clinical aspect of the case is frequently most essential in accurate interpretation of x-ray appearances. Such knowledge should be freely given and the necessity for it should not be regarded as implying that it will be used in an effort to make the roentgenologic findings correspond with the clinical suspicions of the condition present. The reason for this should be self-evident, because many very different pathological processes or abnormal conditions produce the same or similar appearances on the radiograph. For example, the normal pulmonary trunk shadows may be accentuated or areas of normally almost structureless lung may be made visible by contrast as a result of any acute respiratory infection, such as pneumonia, acute bronchitis or the infectious fevers with lower respiratory tract manifestations; any chronic respiratory infection, such as tuberculosis, syphilis, chronic bronchitis, chronic nontuberculous pneumonia or Vincent's organisms; any continued irritant; and heart disease with decompensation and passive congestion. In many instances the appearance is not characteristic of the condition causing it.

The number of pathological conditions in the chest of the child in which a roentgenologic study is applicable is so great that only a few of the more important ones can be discussed at this time. Those selected for the purpose are acute respiratory infections, tuberculosis and thymic enlargement.

ACUTE INFECTIONS

Acute respiratory infections, including the acute infectious fevers giving rise to lower respiratory tract manifestations, may decidedly alter the normal x-ray appearance of the child's chest in any one or all of three ways: by causing visible enlargement of the tracheobronchial lymph nodes, by intensifying the hilum and trunk shadows and linear markings or by making more prominent the faint and almost structureless shadow of the lung parenchyma.

The changes last mentioned are usually indicative of such conditions as pneumonia, atelectasis or abscess, each of which in itself, requires careful and time-consuming consideration. They will be passed by with only the brief comment that x-ray study is applicable to all of them. There is no longer the danger connected with the examination of pneumonia cases that formerly existed. It is now a very simple and safe procedure to examine them by use of the bedside equipment without disturbing the patients. Routine examinations of pneumonia cases are not essential except in the interest of general study and investigation, but it frequently happens that in individual cases x-ray studies may be of inestimable value in clearing up some clinical uncertainties.

In nearly all the acute respiratory infections in children the enlargement of lymph nodes and the intensification of hilum and trunk shadows and linear markings are to be noted. These appearances are likely to persist for some time after the acute clinical manifestations of the infection have disappeared, and they are very frequently identical with the roentgenological findings of some of the chronic infections. In other words, it is possible to find in the chest of a child, clinically well of a previous disease, such appearances as we may find in connection with a chronic infection like tuberculosis or chronic nontuberculous pneumonia. We frequently find, therefore, in the proper interpretation of abnormally accentuated hilum, gland and trunk shadows a most difficult problem. It is probable that in no other group of roentgénologic examinations have there been more errors made in interpretation, both in the recognition of distinct abnormalities and in the ability to make them conform with their proper etiological factors. The author takes this opportunity of freely acknowledging many mistakes in the past before proper steps were taken to stem the tide of error by an extensive study of the normal. Due acknowledgment is given, however, to the frailty of the human mind, and the fact that the physician who thinks he is never wrong is a dangerous one upon whom to depend. A committee of internists and roentgenologists appointed by the National Tuberculosis Association for the purpose of studying the x-ray and clinical findings in the normal chest of the child recently completed their work. While there has been an agreement among us not to make personal use of these studies in subsequent literary efforts, the report may be mentioned as a possible service to others in the differentiation of abnormal shadows from the normal, as the study of the subject was to us.

Small visualized lymph nodes are found in nearly all the radiographs of the chests of normal young children. Their significance is therefore nil. They may not be readily detected in infancy. Their etiology is uncertain, but presumably some past infection such as all children have had. We know every child has had some past respiratory infection, and as nearly every chest film shows these small discreet gland shadows, they mean nothing. If, however, these gland shadows are larger, and especially if they become confluent into dense hilum masses with usually irregular, but sometimes regular contour, the appearance is exceedingly significant. Similar remarks might apply to cervical lymph nodes. Nearly every young child has a few discrete small glands barely palpable in its neck, and the fact is not regarded as of any significance, but the presence of several nodes of considerable size is at once regarded as distinctly abnormal and a search is instituted for the cause. If an x-ray report does mention the presence of visible tracheobronchial lymph nodes, it is very important to state whether these are large, numerous, conglomerate or produce massive shadows. If they are abnormal the character of the other lung shadows should be mentioned. While the presence of a few small calcified hilum glands may be an indication of a previous tuberculous infection, they are not in themselves an indication that the child is tuberculous in the absence of any other present or past evidences of the disease.

PULMONARY TUBERCULOSIS

In adult tuberculosis, the value of an x-ray examination need not be questioned in these days. In childhood, however, and particularly at very young ages, we have to deal with an entirely different aspect of the disease. There is lacking in the child (puerile type) the characteristic roentgenologic features found in the adult type. In the typical puerile tuberculosis the appearance may be roughly described as an enlarged hilum shadow with increased density and with or without definitely visible glands, and radiating from this the trunk shadows are very much accentuated. This appearance may differ little if any from that due to an acute infection, syphilis or passive congestion, although later on, the parenchymal portions of the lung in tuberculosis may present the same typical mottling of individual tubercles as is seen in the early stages of adult tuberculosis. What, then, is the value of an x-ray examination in a rather early case of suspected tuberculosis in a young child, if the appearances are so difficult to differentiate from those of many other conditions? Given a case presenting the symptom complex of tuberculosis, with or without definite chest signs, if no other evidence of the disease can be found clinically or roentgenologically, or if most or all other conditions producing similar x-ray appearances can be ruled out clinically, and such an appearance as has been described above is found in the chest, this may be regarded as corroborative evidence of the clinical suspicions, and as such, indicate the type of lesion and extent of the disease. A positive etiological diagnosis cannot be safely made on x-ray evidence alone, and the policy of treatment must be governed by the clinical aspect of the case. Negative x-ray findings in satisfactorily clear films are good evidence against the presence of pulmonary disease. As the age increases we more frequently find the adult type with its more characteristic roentgenologic evidences.

CHRONIC NONTUBERCULOUS PNEUMONIA

It is with some hesitancy that this term is used because of the uncertainty of x-ray findings and lack of substantial proof that what is found in the roentgenogram is identical with the pathological entity. There is a typical picture which may be described as follows: The usual increased prominence of hilum and trunk shadows, the latter being especially in evidence in one or both bases; frequently some noticeable glandular hypertrophy; an area of increased parenchymal density in usually one or sometimes both bases. The appearance is not unlike a beginning or a resolving pneumonia, the early stage of abscess, or it may be caused by the presence of a foreign body. In many instances all of these conditions are excluded and the appearance persists. Usually there are definite clinical signs, especially impairment and râles, but sometimes none are elicited. In other cases identical signs may be detected and the x-ray examination reveals nothing, except possibly the hilum and trunk shadow changes. It is quite likely that this is one of the chronic lung conditions of bacterial origin that may be materially helped by x-ray treatment in the future with a success comparable to that which has recently been obtained in the treatment of whooping cough.

THE THYMUS GLAND

This structure may be diagnostically considered in connection with tumors, the enlargement found in the condition of status lymphaticus and the simple enlargements or persistence in size beyond the normal age for atrophy. The latter condition is the only one which will be discussed here. Thymic enlargement may be considered simultaneously from the standpoint of both diagnosis and treatment, especially as a diagnosis is frequently based upon a therapeutic result or failure.

We are all familiar with the anatomic history of this gland; of its relatively large size in infancy; of its slight increase in size from birth up to the age of a year or more and then its gradual atrophy to a very small organ. In infancy it is very vascular and made up largely of lymphoid structure. It may become abnormally large for the age of the child through hypertrophy of its cellular structure, and it may take on very sudden increases in size probably as a result of increased vascularity. Under such conditions dangerous pressure may ensue or even sudden death may result from asphyxia. The clinical diagnosis is not always a certain one and the same may be said of the roentgen ray diagnosis.

During infancy there is usually no difficulty in visualizing the thymic shadow in clear films, but one frequently hesitates to express an honest opinion as to whether or not the shadow is too extensive or dense for the age of the individual. Probably herein lies a very definite source of error in diagnosis, but not the most frequent one. More often we find a thymic shadow which we regard as normal for the age of the patient, and yet the child presents almost unmistakable clinical manifestations of enlarged thymus. We may be perfectly correct in stating that the shadow at the time is not too large and the child probably does exhibit symptoms of enlargement intermittently. This has occurred so frequently in the experience of all of us, and the ordinary short treatments directed toward relief of the condition have served to dispel all symptoms, temporarily or permanently, so often that we must look for a satisfactory explanation. The most rational one seems to be that the gland has periods of normal or nearly normal size, during which the child is examined, but through sudden vascular changes, the organ rapidly undergoes hypertrophy, with the production of pressure manifestations.

Another source of error may lie in the fact that radiographs of the child's chest are not made during both full inspiration and complete expiration. We have frequently been able to make a diagnosis of enlargement on a film exposed during expiration, whereas another made within a few seconds during full inspiration showed no enlargement, or even no shadow whatever. Finally, masses of enlarged lymph nodes or neoplasms may be mistaken for a large thymus, and vice versa.

The diagnosis of thymic enlargement having once been established the next step is almost invariably the institution of radiation treatment, which can be regarded as practically a specific. Radium, of course, may be employed but the x-ray is far preferable, except in cases in which the few minutes of crying or struggling of the child might be regarded as a distinct element of danger. Our method of managing the child is to roll it up tightly in a sheet, which is then pinned securely to the mattress of the treatment table. A strip of canvas about six to eight inches wide, with a sand bag at each end, is then placed over the knees and another over the chest. The bags hang over the sides of the table. A folded pillow case or small sheet is placed under the shoulders to make the upper chest prominent and throw the head and chin back, in order to give free access to the thymic region. Usually somewhat less than half an erythema dose of x-rays is then applied, and as the tube is excited with 10 m.a. of current, this takes about two and one-half minutes. A similar dose is given a week later on the posterior aspect of the upper thorax. Usually, however, a marked improvement is noted almost immediately after the first treatment. Subsequent similar applications may have to be repeated for recurrence of symptoms. It is taken for granted that this remarkable result is due to the well recognized rapid effect of radiation upon embryonal lymphoid tissue.

University Hospital.

DISCUSSION

Dr. John E. Livingood (Reading, Pa.): I have here a brief history of a child which developed a pulmonary abscess which I shall read:

Fred Lorah, Age 15, Dr. Wm. L. Hiester. Operation tonsillectomy, June 13, 1923, Homeopathic Hospital, Dr. Klopp. Patient returned home complaining of a sore throat and of feeling tired. This persisted for one week. Patient was not in bed. July 2d, patient presented himself to his family physician, Dr. Wm. Hiester. Patient complained of pain in the right side of the upper half of the chest. Temperature was 102 degrees and pulse was 88. Patient had a cough and felt tired. The chest was depressed on the right side and held rigid and the neck was drawn to the right side on account of pain. Clinical examination showed a few râles in the upper half of the right chest. There was no evidence of pleural friction rub nor of consolidation found. First x-ray examination was made July 5, 1923. Patient was put to bed and treated expectantly. There were many remissions and returns of the fever. Condition became worse with patient sitting or being out of bed. August 15th patient had a slight hemorrhage followed by a bloody expectoration. Expectoration was profuse for 48 hours, about three teacupfuls. The patient was very septic at this time. The sputum was negative for T. B. The urine was negative. Widal was negative for typhoid A and B and paratyphoid. Blood examination hemoglobin 78%, red blood cells 4,210,000, white blood cells 14,200, color index .9, polynuclear 78%, large mononuclear 2%, small lymphocyte 19%, transitional 1%. The red cells were pale but normal in shape. Consultation was had with a surgeon who suggested operation for pulmonary abscess. Second x-ray examination August 16, 1923. From this time on under expectant treatment convalescence was uninterrupted and patient was clinically well when the third x-ray examination was made, September 19, 1923.

Dr. Myre Solis-Cohen (Philadelphia, Pa.): I am very much interested in the talk that Dr. Pancoast gave us upon the subject of puerile tuberculosis. I have had charge of the children in a tuberculosis sanitarium, and have had charge of them for a number of years, and my experience does not exactly accord with the ordinary idea in regard to what is called puerile tuberculosis. In a great many of the children I do get the same physical signs in the lungs that one finds in adults; but in a number of children that show the x-ray pictures described, I feel they either do not have tuberculosis at all, and if they do, that it is healed. We know that a large percentage of everybody has tuberculosis in childhood, and these signs may occur in children who recover completely and never show any clinical evidence of tuberculosis. When a child takes sick and you find these evidences, the diagnosis is often made of tuberculosis. Some children are in what they call the pre-tubercular stage, and all they need to do is to go to some hygienic place, such as a sanitarium, and build up and they get all right. But there is another group that do not become all right when they go to a sanitarium, and who do not respond to treatment, and some of these cases do not show any hypersensitiveness to tuberculin even in a large dose. As a rule, I first test them with a small dose, beginning with one millionth of a milligram, and gradually raise that to a milligram. The curious thing about a great many of these children is that they do have some upper respiratory infection—upper rather than lower. In a number of these children there are diseased tonsils, and from these tonsils you can obtain organisms which the child's blood does not kill. If you just culture a tonsil or throat or nose you merely get the organisms which are present, which does not mean that they are pathogenic to that particular child. If, in addition to culturing in the ordinary way, with your swab you make a little smear at the bottom of an empty test tube and put the child's blood on that, then the organisms that grow up will be the organisms that the blood failed to kill. The organisms that the child has bactericidal power against will not grow up. When, in such cases, tonsils containing organisms that the blood will not kill are removed, even though the child is running a fever, in many cases the fever drops to normal and the child gets well. In other cases which present the signs that Dr. Pancoast has described, and in whom there are pathogenic organisms in the rhinopharynx, when a vaccine is made from that organism and administered the child will frequently get well; the temperature will go down to normal and the child will gain in weight. I am particularly interested in that phase. I would like it if Dr. Turnbull would say something on that subject too, because he has seen so many thousands of children. I would like to know his experience in relation to real tuberculosis of the x-ray picture described and puerile tuberculosis.

Dr. William G. Turnbull (Harrisburg, Pa.): I do not know anything that is more difficult to decide than whether a child between the ages of six and twelve has tuberculosis or not. There is no question that we treat a large number of children as tuberculous that we cannot prove definitely are infected with tuberculosis, at least we cannot prove that tuberculosis is the organism that is really doing the damage. The picture that you have seen on the screen is the one that is commonly seen by the x-ray. The cases such as I described are what you see clinically. That child has usually an irregular temperature, is anemic, and is definitely under weight. These are the children that we call tuberculous. Often times I am positive they are not, and I think the type Dr. Cohen refers to is definitely tonsillar infection. I recently had an experience which is so interesting to me that it may have a definite bearing on this subject. I had the very pleasing and interesting experience of being appointed as a member of the Board which was to go over all the negative sputum of soldiers in one of the veterans' sanatoria recently. We found forty-five per cent of the cases being treated in that sanitarium had never had positive sputum. They were sick and they were all drawing compensation, but they never had positive sputum. About half of these negative sputum cases had pus in their tonsils. We could actually express the pus. The combination that we usually found was purulent tonsils and chronic basal pleurisy, and on that the diagnosis of tuberculosis had been made. I think, with Dr. Cohen, it is very frequently the secondary organism that is responsible for these pulmonary conditions that we are not definitely able to prove real tuberculosis.

Dr. Joseph B. Feeley (McKeesport, Pa.): I would like to ask Dr. Pancoast if he always uses two and a half minute treatments for enlarged thymus without regard to the weight and age of the infant?

Dr. J. Claxton Gittings (Philadelphia, Pa.): Those of you who have not happened to read the book on tuberculosis in children by Ghon, I think would be very much surprised, as I was, to know what his very exhaustive pathological studies had disclosed. He was the advocate of the primary pulmonary avenue of infection as opposed to the intestinal, chiefly because he found, in a comparatively large percentage of young children, healed tuberculous foci without tuberculosis elsewhere. The children had died of other diseases and the tuberculous foci lay chiefly in the immediate distribution of the roots; not up in the apices, nor down in the extreme bases. I came to the conclusion that in the case of a child with a pulmonary lesion who gave a positive tuberculin reaction, I would never attempt to say whether or not in any degree that lesion depended upon tuberculosis, because the inflammatory reaction which would occur around each foci at the time of their activity might very easily be mistaken for some non-tuberculous infection. The distribution of the true tuberculous lesion is very important. If it is in and around the roots, with the bases and apices clear, there is a strong probability that the child has tuberculosis, although he may make a perfect clinical recovery.

Dr. Pancoast (in closing): In reply to Dr. Cohen's remarks, I cannot enter into a clinical or pathological discussion of this subject except to say that the pulmonary path of infection appeals to me most strongly. To go back to the description of the so-called puerile type of tuberculosis from the x-ray standpoint, as I said then, I want to emphasize now, that no one can tell the difference between a puerile tuberculosis when the roots alone are involved and the result of any other respiratory infection. It is only by further study of the case that we can possibly get the correct light on it, and it is only by the correlation of clinical and x-ray data that we should come to any definite conclusion. In the one set of slides shown the disease began in that way, starting as an accentuation of the hilum shadows and the trunk shadows radiating from them. Then after a period of a month there was very definite evidence of tubercles through both lungs, and the child died of pulmonary tuberculosis. We are only discussing the appearance of the so-called puerile tuberculosis as we see the disease at an early stage and certainly not as a late lesion. In answer to Dr. Feeley's question in regard to the technique of thymus cases: I merely mentioned the time factor to indicate the very short time that may be required for the exposure of the struggling child. We try to keep our time down to two or three minutes, and to compensate for that short period by increasing the amount of current through the tube. We do not make any difference in the dosage for an infant of a few months or a child two or three years old. That treatment is repeated a week later over the back, and, if necessary, at a little later period again over the front. Perhaps it would be better not to mention the time factor in dosage but to say that we give a little less than half an erythema dose, which would be more accurate.

THE AMERICAN MEDICAL ASSOCIATION*

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It is with a great deal of pleasure that I come before you this day to give you a glimpse of the history, accomplishments and purposes of the administration from the central offices of the American Medical Association. I feel honored to be requested to speak before the Medical Society of the State of Pennsylvania because I have always believed in the representative medical society of the United States. I also feel myself one of you because I am a medical product of your state, as I received my degree from your great University of Pennsylvania, and obtained through its hospital my first instruction in the practice of medicine and surgery.

Like many of you here assembled, from my earliest days in medicine I became deeply interested in the aims and objects of the American Medical Association, and enrolled myself as a member and attendant at many of its annual meetings, but I fear like you, I had rather a vague idea of how and by whom its great work was being accomplished, or of its methods of administration through its great central headquarters. I was always more interested in the scientific assembly, less in the policies and the business side of the organization. Not until I became a member of the board of trustees, where I gained a more comprehensive view, was I brought to a full realization of the masterly manner in which the organization had been built up, and how the central office, in men and mechanical equipment, was prepared to carry out the great work for the betterment of scientific medicine, for the protection of the public in health problems, and for your medico-political, economic and professional welfare. It will well repay any of you, when visiting Chicago at the next annual meeting (May 19-23), to devote a day or two of your time to a visit, and thorough study of what you have in the headquarters in men and equipment. I am sure you will return to your homes satisfied and amply repaid for the time so spent.

During the earlier days of the Association its delegates were too indifferently and too unrepresentatively selected to accomplish much for the advancement of the objects for which it was created. The legislative body was too large, too unrepresentative, too unwieldy to bring into action many of the good and beneficent resolutions offered by well-meaning committees. Many committees, no doubt, recognizing the futility of constrained effort, would as we now say, "pass the buck," while others would make a creditable report but no effort to see that their recommendations were put into action. In spite of all these lost efforts there were many undaunted leading figures, who although subject to many defeats and frequent depressions of spirits, carried on, and through their efforts, continuously exercised from year to year, much good was accomplished even through the faulty organization then in hand.

Through a gradual process, the character of the representation was improved until the membership itself recognized the fact that a less unwieldy body, of a more representative type could accomplish the legislative, administrative and other functions of the association with more deliberation and less loss of motion than through a large body of delegates.

As a result of this conviction the delegates were ready for the acceptance of the reorganization plan which was adopted in 1901. It is remarkable how much was accomplished during the period from 1847-1901 despite many handicaps, the greatest of which was arousing the spirit in the profession for those great advancements made in medicine during the past thirty-five years. In the early days of the association it was practically without funds to meet its current expenses. Several of the treasurers called the attention of the membership to its indebtedness. Members were lax in their payment of dues, and many never honored their obligation. There is no truism more potent than the fact that no organization can have full influence and strength among its adherents or the community at large until it has a home, and financial stability great enough to meet its obligations fully.

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*Read before the General Session of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 2, 1923.

†Member of the Board of Trustees of the American Medical Association.

In 1883, the Association founded the Journal of the American Medical Association, and created a board of nine trustees to have charge of the business management of the Journal as well as supervise the publication of scientific papers in said Journal. The establishment of the Journal was not only the crowning tribute of the Association to scientific medicine, but it was also through this publication that great solidarity was brought to the organization, and through its revenues the Association was lifted from a hand-to-mouth existence to a condition of practical financial affluence.

For several years the Journal had its office at the home of the editor, Dr. N. S. Davis; it then made three moves to rented quarters. In March, 1902, the Association purchased a home site at the northeast corner of Grand Avenue and Dearborn Street. On a part of this site a building was completed, equipped and occupied December 1, 1902. Thus the second great step to add dignity, efficiency, influence and character to the Association was accomplished.

Witness from this time how the various activities of the Association accepted new life, increased efficiency and accomplished results. In 1904, the Council of Medical Education and Hospitals was established. In 1905, the Council on Pharmacy and Chemistry was organized. In 1910, the Council on Health and Public Instruction was created. In 1915, the Council of Scientific Assembly was established.

Reading the history of the earlier periods of the Association will convince one that they had their problems to overcome as we have ours of this day. Many of their problems in more intense forms, are still with us in minor degree.

One great problem of theirs which does not exist with us to-day was the large number of so-called doctors who had never entered the halls of a medical school. Some of those present can probably remember in your early days of practice several such individuals in your own community. Thanks to the efforts of the American Medical Association this great blot on the history of the medical science was removed by its successful efforts in creating State boards of medical examiners. Examining boards to grant the civil right to practice medicine exist in every state, territory and dependency of the United States. While these laws lack uniformity, and are not what we fully desire, they are the best that could be obtained from the various state legislatures. We are seeking through our new bureau of legal medicine and legislation to codify a uniform legislative measure that may be introduced into the various state legislatures with the hope that through persistent uniform pressure of a united profession they may be enacted into laws. Many of the old problems were solved by our predecessors, but we have others which are new—the creation of the present day social environment.

Our predecessors through years of assiduous work accomplished for us: the reorganized medical association; the established Journal of the American Medical Association; the headquarters with all it implies; the various councils and bureaus with their well-defined rules and regulations; and a profession never so united and eager to meet and solve its problems for the benefit of humanity and the advancement of medical science in righteousness and with justice to all. We of the present day must see to it through persistent and united action, with loyalty to the profession and open mindedness to the welfare of humanity, and justice to the lay community that we meet the various social problems working upon the body politic and solve them as they can be wisely adjudicated only through medical leadership.

The American Medical Association is a thoroughly democratic organization. Its strength lies in the individual member. Thorough and well maintained organization in the district and county medical societies up through the State Association is essential to the welfare of the national body. Every member of every county medical society, whose name is reported to the state medical association, and through its secretary to the Secretary of the American Medical is an enrolled member of the parent organization. Thus every member of a county medical society, if the various secretaries have performed their duties, is a member of the American Medical Association. In order to become a fellow, further action is incumbent on the member. He must in order to accept fellowship associate himself with some branch of the scientific assemblage, make application on the prescribed blank, pay the annual dues, now six dollars, which automatically secures him one year's subscription to the Journal of the American Medical Association.

I do not propose, on account of the length of time required, to go into a description of the functions and duties of officers, committees, councils and bureaus of the organization, however interesting it may be, but limit the remainder of my remarks to calling your attention to several important recent activities of the Association. Before doing so, however, I wish to remind you that a great deal of criticism is the outgrowth of want of knowledge. Most of the uncertainty in the world is the outcome of misunderstanding, misconceptions and improper interpretation.

The first new and recent activity of the Association to which I wish to call your attention is the Bureau of Legal Medicine and Legislation. This bureau was authorized by the House of Delegates at the annual meeting held in St. Louis in 1922; at headquarters and under the administration of a full time secretary. Fortunately the trustees were enabled to secure the services of Dr. W. C. Woodward as secretary, who through education and training was highly qualified to organize and conduct such a bureau. Although only over a year old this bureau has already a number of worthy accomplishments to its credit. Immediately upon its establishment, and while yet in the throes of organization, it had many and important problems and projects to take under advisement. These activities, thrown so early upon the bureau have delayed its complete organization which is now imminent. In spite of these handicaps the secretary is pursuing his work in linking up the state associations in medico-legal and legislative problems and in medical defense with his bureau; and a certain amount of field work has been done by him in visits to several states on invitation.

This bureau when completely organized will be able to take up the many projects which it already has well in hand for the protection and welfare of the profession, and of great interest to medical organization. I prophesy a keen interest of all in this bureau and feel that it is destined to be one of the most popular bureaus under the administration at headquarters. I bespeak of you, your hearty coöperation with the activities of this bureau.

Another important action taken at the St. Louis meeting, was the instruction to the Board of Trustees by the House of Delegates to establish a lay journal to educate the public along rational lines of hygiene and public health. As a result of this authorization the Board of Trustees established *Hygeia,* a journal of "Individual and Community Health." The first number of *Hygeia* was issued in April, 1923. As this journal is established along altruistic lines for the betterment of the public in questions pertaining to hygiene and health, as well as, demonstrating the ideals and methods of scientific medicine, it it destined to have a brilliant future. A member of one of the largest publishing houses in America told me that *Hygeia* is by far the best lay journal on public health that has ever been established. Without any general advertisement its circulation has already passed the twenty thousand mark. It is essential that the profession support this journal and use all efforts to increase its circulation. I have yet to meet a dissatisfied lay subscriber. They all want more and are eager for the next copy.

The Bulletin, which is published for organization purposes has had only a limited circulation heretofore and therefore has not accomplished all the good that was expected of it. *The Bulletin,* under direction of the House of Delegates, in order to reach a wider circle of readers will be mailed to all fellows of the Association. The circulation will thus be increased to about fifty-six thousand. Since 1921, the American Medical Association *Bulletin* has been the official journal of the House of Delegates. The *Bulletin* is intended as a medium for dissemination of official business; as a medium of exchange of views between officers of the associations; and of general topics such as organization, medical defense, medical economics, general topics pertaining to the welfare of the profession, and the policies of the Association. Its columns are open to all members of the profession. The *Bulletin* with its increased circulation, issued as a supplement to the Journal will prove of increasing service and value to the profession.

There is another important question which in closing I wish to bring before you for most earnest and thoughtful consideration, and that is the question of periodic medical examinations. This subject has been quite thoroughly canvassed by the Council of Health and Public Instruction, by the Board of Trustees and the House of Delegates of the American Medical Association. The Council of Health and Public Instruction, working in conjunction with a committee appointed by the Conference of Secretaries of Constituent State Medical Associations, has prepared a blank form which meets all the requirements for a standarized and uniform type of record. This blank, as originally prepared, has been objected to by some on account of its small size, and in order to obviate this objection others are being prepared which are larger in size. For those not well versed in this form of procedure, it would be well to read the explanatory pamphlet prepared by Dr. Haven Emerson, entitled, "Periodic Medical Examination of Apparently Healthy Persons." The record cards and the instruction may be obtained by application at headquarters. It seems hardly necessary to appeal to an enlightened profession as to the urgency of such examinations, as irrefutable evidences of their value are constantly being presented to you in your daily activities. The cemeteries are full of bodies of those, who in life, were not ill enough to consult a physician. Almost daily you are brought into contact with cases whose prognosis would have been markedly altered had such a system been instituted and the disease detected in its incipient stage. Of what incalculable value will it be to large classes of people whose whole course in life is leading to an unhealthy state, and which may be easily corrected from data collected at these examinations. The layman is awakening to the value and necessity of these periodic examinations and it is your duty and province to be prepared in advance of the demand that is sure to come.

THE NEW COMPETITION

Many progressive manufacturers and merchants say that the cut price bait is losing its attraction. They are paying less attention to this method of getting more business and more attention to the idea of quality merchandise service. They believe the results so far achieved justify the statement that their customers will be better served and their own profits enhanced by giving more attention to quality, and less to price.

Real service is what counts. While many people will shop about for prices, the great majority are better satisfied with quality merchandise and good service at a fair price. This makes for confidence—the corner stone of satisfaction.

Mr. Charles Wesley Dunn, counsel for a number of large manufacturers in this country, has given this problem a great deal of thought. His conclusion is that we are now approaching the time when the real competition will be in merchandise and service rather than in price.

As a nation, we have developed to the highest degree the science of quantity production. Now, with characteristic American progession, it is only natural that we are experiencing a very definite trend toward the development of quality production.

AN INTERVIEW

The public press has been presenting considerable discussion on the National Prohibition question, and desiring first-hand information we paid a visit to the office of William G. Murdock, the State Prohibition Director, 219 North Broad St., Philadelphia. Major Murdock has but recently assumed the duties of Director for Pennsylvania, but is rapidly becoming familiar with the conditions existing.

We asked him if the physicians of the state were causing any trouble. He smiled and replied, "Some." He said, "I am very glad to take this matter up with you because I am anxious to have the conditions placed before the members of your profession so that we may deal fairly with them and cause no hardship upon those who are really sincere in endeavoring to follow out the provisions of the National Prohibition Act and Act of November 23, 1921." Among the points brought out by the Director were the following:

A physician cannot obtain a book of blank prescriptions ahead of the time allotted for the use of each book. One book of 100 prescriptions is allowed every ninety days.

The physician should be careful in filling out the stubs in the book. He should specify on the stubs the diseases for which the prescriptions are written the same as upon the prescriptions themselves. The Director called our attention to the fact that many physicians are repeating the same disease, prescription after prescription, which to him looked rather suspicious.

He also referred to the issuing of prescriptions to patients more frequently than required by the ten-day limit. He said, "This does not occur frequently, but care should be used in regard to issuing prescriptions contrary to the law in this matter."

He pointed out that incorrect and sometimes fictitious addresses are given on the prescriptions and so recorded on the stubs. It is obvious, of course, that when these addresses were looked up, no such places were found.

He desires to have the profession understand that when the book of stubs is mailed to the office of the Director for the purpose of having a new book issued, a letter so stating should accompany the stubs. This will facilitate obtaining the new book more promptly.

We asked the Director if physicians violating the National Prohibition Act were members of organized medicine, and he was unable to say. We suggested that possibly not all the ones reported as not living up to the law were members of the medical profession. Some times others use the title of doctor when not legally qualified.

The Director handed us the following regarding the use of intoxicating liquor by physicians:

"Distilled spirits, wines, and alcoholic medicinal preparations fit for use for beverage purposes, may be administered by physicians to their patients for medicinal purposes in cases where the use of such liquor is believed necessary to afford relief from some known ailment, and where delay in procuring same through a retail druggist upon a prescription might result in loss of life, aggravation of the ailment, or intense suffering.

Physicians may obtain not more than six quarts of distilled spirits during any calendar year to be administered to their patients only in quantities necessary to afford relief at the time of administration, and may not sell or furnish same to such persons, or to any other persons. The total amount of spirituous liquor administered to any one person by one or more physicians during any period of ten days may not exceed one pint, and where such person is also procuring liquor on prescriptions through a retail pharmacist, the aggregate amount so procured by him and administered to him by a physician or physicians as herein authorized may not exceed one pint in ten days. Alcohol may also be used by physicians in the course of their practice for other than internal use.

When filing applications with the Prohibition Director, for permits to use intoxicating liquors, physicians should indicate kind of liquor which they desire to use, the quantity, the exact manner in which and the purpose for which they desire same. Physicians are also requested, in filing application for a permit, to state the School of Medicine under which they are licensed to practice under the State Law."

The above-mentioned interview was very interesting as well as instructive, and we feel assured that if any physician has a grievance against the State Prohibition Department that Director Murdock will endeavor to deal squarely with the members of the profession who are not willfully violating the law. A Scribe, M.D.

Philadelphia, Pa.,
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EDITORIALS

THE PITTSBURGH SESSION OF OUR STATE SOCIETY

The Seventy-third Annual Session of the Medical Society of the State of Pennsylvania occurred in Pittsburgh the first week of October, and it was a real success as those who were present can testify. Were you there?

We were pleased to hear the many expressions of satisfaction and approval from our members during the Session. Never have we seen so many of our profession indulging in a three-day postgraduate course with as much whole-heartedness and zest as was evinced at that Session. We have reason to believe that the meeting echoed the spirit and sentiment existing among the medical profession in Pennsylvania to-day relative to organized medicine and especially as it refers to our own Society.

We have frequently said that it is not possible for every Doctor of Medicine in the state to attend the annual sessions, but we were delighted to find so many setting aside their every-day cares to attend at least some of the meetings which were so replete with good papers and splendid discussions.

It is largely for the purpose of interesting the members of the sixty-three county societies of the state that we begin now to direct their attention to the Reading Session of 1924. As soon as one session is closed the next one is anticipated and prepared for. We hope that from time to time we can keep you reminded of the Reading 1924 session, and that the result will be such a large outpouring of delegates and members as never before has been experienced at the state meetings held in the smaller cities.

THE STATE SOCIETY MEETING—A SUGGESTION

The splendid meeting of the State Society at Pittsburgh is over and all will admit that it was one of the very best that we have had.

In view of the work of the Scientific Committee and the fine program presented it seems ungracious to criticize in any particular. The first general meeting, however, in the opinion of the writer, was open to criticism from the fact that it was too good, in the sense that there was too much of it. For instance, the two general papers and their discussions were heard by only a small audience because the hour was so late and the greater part of the members had left the room. These were very excellent papers and their discussion quite interesting and it is a matter of regret that so few people were present to hear them. It is also a mark of discourtesy to invite guests to read papers at a time when an audience cannot be secured. Would it not be better to devote the first morning session to a general meeting in which we could have addresses of welcome; remarks by the retiring president, who would have an opportunity to give a summary of the year's work; reports of general committees; addresses of the incoming president, etc.; leaving the presentation of scientific papers till another session? This is a suggestion of one who listened to the whole program on Tuesday morning and enjoyed it all to the close. L. H. T.

THE DOCTOR'S CONSCIENCE

There has never been a time in the practice of medicine when the profession has been more disturbed by the various laws, rules and regulations of the state and national government as well as the other irritating social conditions, which render the life of the average doctor one full of trouble.

It is a well-known fact that since the earliest days of medicine, the conscience of the medical practitioner has been ruled by his desire to be honest, truthful, upright and conscientious in his dealings with his patients. This applied even to some of those who were not overscrupulous in other matters, for with their patients honesty and conscientiousness prevailed.

The conditions now existing offer a great temptation many times to submerge the conscience and obliterate from our minds the need of rectitude in our various reports in the observation of the laws and rules which are so confusing. It is not an easy matter to practice medicine in the present day. It is much easier to feel that we are still free moral agents to do as we like, thereby disregarding often the imposed duties which carry penalties with them.

Our conscience should still be our guide in dealing not only with our patients, but with the various other agencies that confront us. The federal government is placing more and more restrictions about the practice of medicine in the form of laws, rules and regulations affecting the prescribing of drugs and the writing of prescriptions for those who are ill. The department of the state in the health regulations is requiring more and more attention, all of which rankles in the minds of the profession as being unnecessary and burdensome.

We hope that the conscience of the medical practitioner will not be dulled or obtunded to the extent that the general public will begin to recognize us as desiring to align ourselves with the hosts who are disobeying and violating every one of the enactments which place them in the outlaw class. We have too much at stake. We should have sufficient reverence for our past history and tradition not to stain it by thought or act. Every misstep of any individual in the profession brings a stigma upon organized medicine.

Let your conscience be your guide and make that conscience behave.

OUR ADVERTISERS

The following editorial from the Journal of the Arkansas Medical Society is equally applicable to the members of the societies represented in the Atlantic Medical Journal:

"GIVE OUR ADVERTISERS A SQUARE DEAL"

"Once in a while it behooves us to call attention to our advertisers. Don't lose sight of the fact that the Journal of the Arkansas Medical Society belongs to the members of the society. It is not a private enterprise for private gain and it is supported by the advertisers. Most advertisers trace results. If results are not apparent they cease to use the publication which does not seem to be effective. Therefore it is not only a duty the member of the Society owes himself to patronize our advertisers, but to let the firm from whom he buys know that his advertisement was seen in the Journal. Just a line at the bottom of the order, such as 'I saw your ad in the Journal of the Arkansas Medical Society,' will encourage the advertiser to renew his contract with the Journal."

PROFESSIONAL INVENTORY

The time will soon arrive when most business firms of the country will take an inventory of their stock. For the same reason that any business man takes an inventory the doctor of medicine should annually take an inventory of his stock.

We need not be reminded of the income tax because Uncle Sam does that for us, but we fear that the average professional man, especially in medicine, is lax in taking stock of his goods and chattels of all kinds.

The doctor should take an inventory and keep a record of the books that are in his library, and if he is one of those who are easy to borrow from he should also keep a record of books loaned during the year. From such a list he will be able to tell promptly the representatives of publishing houses just what books he does or does not need.

Instruments and appliances which are used in office or outside practice should be recorded either as a whole or in separate items. Not all physicians pride themselves on keeping up their line of mechanical appliances as the present trend of practice renders it unnecessary to own a large armamentarium owing to the fact that hospitals carry all the equipment required, and as more patients now go to hospitals than ever before, less personal equipment is required.

Office furniture and equipment also frequently become broken and the finish marred, requiring repair. There are other matters of importance which the average doctor does not inventory even though he has kept a careful record of the foregoing especially for fire insurance purposes.

We would particularly call attention to the question of postgraduate instruction and the importance of medical society affiliation and interest. We are impressed with the fact that a great many of the profession are influenced by the commercialism of the times; in other words, being busy and noting the activity of others the desire to accumulate money interferes largely with the purely scientific side of the profession. The inventory, therefore, should include a certain amount of time recorded as attending county, state, national and other medical meetings for the purpose of postgraduate information. County societies, singly or combined, are now in many parts of the state making an effort to offer a postgraduate course through the channels which are available.

We are continually being confronted with the danger of commercialism as well as the statement that the profession is a medical trust. If we are a medical trust we should be 100 per cent more efficient than we are to-day, because it is a well-known fact that the combination of interests increases efficiency in commercial life, which should be equally applicable to the medical profession. The inventory of necessity should include the question of efficiency in the profession in giving to our patients the very best service possible.

Are we interested in preventive medicine? Are we interested in our patients to the extent that we will spread the information relative to the various means of preventing illness, and in that connection might we not advise them as to the need of a periodic physical examination? This examination should not only include the patient but the doctor himself so that he may be kept physically fit and thus increase his efficiency. May we suggest then that in the near future a complete inventory of all the various possessions of the medical practitioner be taken and the results noted?

PIONEER PHYSICIANS OF PENNSYLVANIA

PIONEERS IN ERIE COUNTY

A few days since, while motoring comfortably along on the Perry Highway between Erie and Saegerstown to a joint medical society meeting, I had as a passenger, one of the oldest active physicians in Erie County.

The clear, fresh air, the beautiful rolling country, the fruit-laden orchards, the fields of waving corn or golden grain, the vast meadowlands with their herds of blooded Holstein cattle, all combined to make it an exceedingly enjoyable trip. But a still greater contribution to our enjoyment was the wonderful road over which we were gliding.

As we add to our years, we live more and more in the past. What wonder, then, that the conversation easily turned to the contrast between the roads of fifty years ago and of to-day! From which it was but an easy step to the differences between practice a half century ago and now. What were they?

At three o'clock in the morning, when the 'phone rang—no, there was no 'phone yet—when the knock at the door, or the "Hello the house!" roused the tired, sleeping doctor, he rang up the young fellow who had just hung up his shingle a few blocks down the street and gave him the call. Wait a bit! Not yet! He snapped on the electric light—I mean he fumbled around till he found a match and lit a candle, and then pressed the button to summon his chauffeur while he dressed. I should say that he stumbled out to the stable, roused up his faithful old horse, threw on the harness, climbed wearily into the rig, stepped on 'er—that is, he took the lines and drove at "break-neck speed" which is, being interpreted, the speed which usually holds up a half mile of shining cars and fuming drivers on a narrow road, and, at length, arrived at the home of his suffering patient.

Was he met at the door by an irate mother who demands to know why he was so long coming, and told that he needn't come in, that they had grown tired of waiting—"Willie dear, was SO sick"—and they had called in another doctor? No! Those patients were not the present-day folk who, "if Willie is not better by evening we will call the doctor," and who expect, before they have hung up, to hear his foot on the stairs; who think the doctor is *THEIR* doctor, and seem peeved if he is not available whenever they see fit to call; who never think the doctor needs rest or gets tired or would like to have his day's work end some time, or would like to have an evening with his family. Indeed, no! Willie's mother greets him with an anxious smile and "So sorry to pull you out so late, doctor, but Willie just took down real bad about an hour ago and I was afraid to wait till morning. I think he ate too many green apples. I told him he'd be sick." And sure enough, the doctor finds him doubled up into a regular pretzel of a boy, evacuation continuous in several directions from a given point. Reaching into his Boston bag, he withdraws a package of Mulford's Hypo Units, and, selecting one of suitable strength, proceeds to untangle the various knots in the department of the interior. (Excuse me again. I can't seem to refrain from having Napoleon call Moses on long distance to have him watch the transcontinental mail plane!)

But I seem to have left the road.

The first of these self-denying benefactors to appear in Erie County was Dr. J. C. Wallace, who came to Erie in 1796 to attend Gen. Anthony Wayne. There being but a single short road in the county, he travelled so slowly, at best, that Wayne died before he could reach his bedside.

This road, now called the Grubbed Road, was little better than a blazed trail. It was so named because, in some places the stumps had been "grubbed" out.

The present Perry Highway runs almost parallel to the old Waterford Pike, which was built some years after the Grubbed Road, and a third road known as Shun Pike. The last named was land given by farmers between Waterford and Erie, Waterford having been founded prior to 1753, for their own private use, in order to avoid (shun) paying pike tolls levied by the Settlement Company owning the pike and the plank road.

Over these roads travelled the early settlers; over them from Pittsburgh came the armament for Perry's fleet; and over them was carried the freight passing from Erie to Pittsburgh. Salt was the most important article of trade. Starting from Salina, N. Y., it was carried by wagon to Oswego; to Niagara by boat; carried past the Falls to Schlosser, thence to Black Rock. By boat it was taken to Erie, by wagon over parts of the present Perry Highway to Waterford, from which it was taken by boat down French Creek and the Allegheny River to Pittsburgh. This required six months, and of every hundred barrels so transported, seventy-five were required to pay the freight.

With this atmosphere, consider what must have been the hardships of the pioneers in Erie County! Then kick yourself the next time you cuss about a piece of poor paving or a half mile of detour on dirt road that would have been the "golden streets" to—well, probably to the old medic who pulled at his whiskers and slyly winked as he told your great-grandfather, "It's a boy!"

Among these pioneers were many who cared not only for the physical health of the county, but the civic and moral health as well.

Dr. B. H. Phelps, of Corry, born in 1844, did brilliant service in the Civil War, and later in life, in the midst of a very busy practice, found time to serve Corry as its mayor.

Dr. T. W. Barton, of Waterford, born in 1834, was the son of Dr. Ira Barton whose birthyear was 1796. Both father and son practiced together at Waterford till the death of the former in 1884. Dr. T. W. Barton died in 1907.

Dr. Jos. R. Pope, of Corry, was born in 1849 in North Carolina. Voluntarily taking his father's place in the drafted troops, he saw service in the Southern Army till the end of the war. Beginning his practice in North Carolina, he became at once successful, but in 1901 his health failed and he was compelled to make a change. He found Corry to his liking and there he has practiced successfully to the present time.

Dr. Adriel G. Ely, of Girard, was born in New York in 1820. Sumner Ely, his father, was a graduate of Yale in 1804, a classmate of James Fennimore Cooper and John C. Calhoun, was in 1840 made president of the New York State Medical Society, and in 1852 a delegate to the American Medical Association.

Adriel Ely located in Girard in 1845 where he built up an unusual practice. After forty-two years of activity, he died in 1887. His brother, Dr. Benjamin C. Ely, was five years his junior. Graduating in 1850, he practiced till 1857 at McKean. Removing then to Girard, he continued in active practice and conducted a drug store till his death in 1904.

Dr. Edward Cranch, born in 1851, was a native of New York City, although he began his medical career in Erie in 1876. From that time till his death in 1920, he was known as one of the foremost Homeopaths in this section of the country. He was one of the charter members of the International Hahnemannian Association. His memory is honored by a host of friends and patients and his fellow practitioners.

Dr. James H. Delaney, a lifelong resident of Erie, was born in 1852, licensed to practice in 1886 after graduating from Bellevue, N. Y., and was doing special work in diseases of the eye, ear, nose and throat at the time of his death in 1907.

Dr. Richard H. Duff was graduated from Western Reserve Medical College in 1884, practiced a short time in Sharpsville, Pa., and at Brookfield, Ohio, after which he located at Girard (1889), where he remained till the time of his death from pneumonia in 1909. He was born in 1856.

Dr. Gabriel A. Elston was born in 1853. He graduated from Waterford Academy and later from the University of Michigan, in 1872. In 1886 he began his practice in Wattsburg where he later held several public offices.

While we go back to 1855 for his birth, Dr. F. L. Hall is well remembered by all the present members of the Erie County Medical Society, his unusually active life having ended but a few months ago. Graduating from Western Reserve in 1882, he practiced in New Richmond and Cambridge Springs for ten years before coming to Erie. Being a man of few words, not many of us knew the real man, but those who did admired and respected him.

Although born in 1838, the memory of Dr. D. H. Strickland is still fresh in the minds of even the youngest members of the profession in

Erie. From the time of his graduation from the University of Pennsylvania in 1863 to the end of the war, he was surgeon to the 111th Penna. Volunteers. He registered in Erie County in 1881 and rapidly advanced to the front in his practice of both medicine and surgery. He died in 1919.

Dr. Anson Parson will be remembered by the older residents of Albion and Springboro. He came to Erie County in 1840 as a farmer and carpenter. When the Civil War broke out, he enlisted, and for the entire four years was a hospital steward. After his discharge he studied medicine at Baltimore, returning to Albion to practice. In 1872 he removed to Springboro where he built a residence and a sanitarium near the spring. This sanitarium became widely known and was patronized by patients from far and wide.

Dr. Samuel F. Chapin, a man of noted abilities and attainments, was born in 1834 in New York. The following year, his parents took up their residence in Wattsburg. After leaving the public schools, he entered Erie Academy, later, Phillips Academy at Andover, Mass., and received his A.B. at Ann Arbor in 1858. Entering Yale, he graduated in medicine in 1860. Enlisting at the very beginning of the Civil War, he saw active service with the Army of the Potomac till Lee's surrender. After a brief practice in Chicago, he returned to Wattsburg where he was successively burgess, justice of the peace, and school director. He was the founder of *The Wattsburg Sentinel*, a weekly paper still in existence, and which he edited for fourteen years. In 1874 he was elected to represent Erie County in the State Legislature, and so well did he serve that he succeeded himself in 1876. He died full of years and honors in 1908.

Dr. C. W. Stranahan received his degree from Jefferson Medical College in 1867 at the age of 22. Coming to Erie in 1881, he soon had one of the best practices in the city. He was one of the incorporators of St. Vincent's Hospital and chief of its surgical staff for many years. He died in 1911.

Dr. Thomas Purcell, a native of Ireland, was born in 1851 and received his medical degree from the University of Buffalo in 1888. Coming to Erie in 1890, he continued in active practice in and about Erie till his death in 1922.

Of many others who have gone, much might be said, if time and space permitted. Mention should be made, however, of a few. Dr. A. C. Sherwood, Union City, born 1849, died 1911; Dr. W. W. Little, Waterford, 1850-1912; Dr. G. A. Garries, Erie, 1847-1906; Dr. H. A. Spencer, Erie, 1828-1888; Drs. Gates, Goucher, and John A. (Long John) Wright, who was six feet three and built in proportion.

Erie County's oldest living physicians include Drs. H. H. Foringer, D. N. Dennis, J. E. Silliman, and Peter Barkey, all of Erie, E. E. Kendall, of Waterford, and Dr. B. H. Putnam, of North East, and Adella B. Wood, of Erie, both retired. The sum of their ages is 440 years, and those still working have an average record of 46 years to their credit.

A visit to the Pennsylvania Soldiers and Sailors Home recently found Dr. Foringer in the office of the hospital of which he has charge. The medical is but one of the many sides of this active man's interests. Ever one of the first to sense a need in his community, he is one of the first to throw himself whole-heartedly into meeting that need. A request for some of his early interesting experiences elicited a deep chuckle.

"I remember whipping my horse to break-neck speed over a three-mile stretch one afternoon," he began, "to see a child in a fit. On arriving, I found all the neighborhood gathered in, and the little patient the least concerned member of the group. I was soon informed by one of the females present that she had pulled the warts off the inside of a horse's hind legs, made a tea and with it drove out the fit! I told them I admired the fit for knowing when to move!"

"O, yes," he added, "there were some curious treatments in those days—there are yet. Ever hear of 'nanny-berry tea,' to bring out measles! Well, nanny-berries are sheep manure!" And I recalled that recently I had been told by a patient that the milk left in a saucer after a cat has lapped part of it is a sure cure for infant vomiting. And that in Sweden, the favorite old

ing. And that in Sweden, the favorite old

flow of a virgin, administered in coffee!

"Had you in those days as many needless night calls as we have now," I asked him.

"Just as many," he replied, "and many of them were made in a biting gale, on horseback or in a cutter the runners of which often scraped over the top rail of a stake-and-rider fence.

"Ten miles in such a gale once brought me to the home of a sick baby. Everything dark. No response to repeated knocks. Finally a bushy head thrust itself out an upper window.

" 'Yes, the baby *WAS* sick,' came down on the frosty air, 'but it is better now, so you needn't take the time to come in.'

"Pounding through drifts shoulder-high, my western mustang took me seven and a half miles one awful night. It was sleeting in a driving wind. My comforter froze around my neck. Icicles hung from my mustache. Picking off the ice as I sat down beside the patient, I remarked, 'Terrible night; too rough for even a dog to be out.' 'Well, d—n you! What in h—l are you a —— —— fool doctor for?' came from the sick (?) man.

"I turned to go, but on second thought gave him treatment. As I left he asked for my bill. 'Ten dollars,' I replied. 'Ten dollars?' he roared. 'Yes, five dollars for the trip and five for the insult.' And I got it, too," he laughed.

Asked about his obstetric practice, he replied proudly, "Over two thousand cases and never a maternal death."

Dr. Adella B. Wood is not only a pioneer, but a pioneer woman physician as well. In response to a request for some reminiscences of her early professional career, she wrote, in a hand as legible as print, the following, which she read to me with ease without the aid of glasses, although she is well past the allotted three score and ten. The article speaks for itself:

"The pioneer medical woman encountered the usual obstacles common to all pioneers in unpopular movements. The medical man, running true to form, did not hesitate to lay down the law. The audacity of the male, generally, in deciding just what woman may and may not do, has from girlhood filled me with amazement. The nerve is monumental.

"The Civil War brought woman and her work into the foreground, but still, even in the seventies, her education was a subject for ridicule, the majority honestly believing that she was mentally and physically handicapped. A small number of middle-aged men and women, observing the growing desire for education in the younger generation of women, had advanced to the point of believing it was at least fair to give her a chance in those public institutions which she helped to maintain with taxes on which she never had a rebate because of her alleged inferiority.

"Almost as if by magic, the doors of Michigan University were opened to women. However, women did not immediately enjoy the full 'Open Sesame.' During the college year, '73 and '74, Dr. Douglas, Professor of Chemistry, made the women students the butt of coarse jokes and, to the great amusement of the men, told stories not too refined. But during that year, Prof. Douglas jeered at the germ theory, and became greatly amused at the idea that the mosquito could have anything to do with the spread of malaria, so quite naturally we women had very little regard for his remarks and very little respect for him. He very soon passed into the discard.

"Dr. Palmer, Professor of Theory and Practice, after a quiz, complimented the women for their intelligent answers, and then said he had opposed our admission to the university, but, since the people of Michigan had decided in our favor, he must either teach us or resign. He added that we had done well as students, but he had no faith that we would ever become successful practitioners.

"We often received such kind words of encouragement.

"However, it is an established principle that obstacles act as a stimulus to renewed effort. All the other professors treated us politely and pleasantly. If they had any personal objection to us, they were wise enough to realize that the subject was not one for discussion.

"One day a Presbyterian clergyman from Detroit visited the surgical clinic. Dr. McLean was operating on a man with aneurism in the popliteal space. We women sat on the upper seats of a large amphitheater, quite unable to see any details, but the pious gentleman was greatly shocked and wrote a letter to a Detroit paper denouncing our brazen appearance. One of the women replied and several letters were written by both parties. It was a foolish and futile correspondence, quite beneath our dignity. It should have been beneath the dignity of the clergyman to attack us—it certainly was outside his sphere.

"At the Woman's Medical College of Philadelphia we were very welcome and treated as intelligent students, though at Jefferson and Blockley we were simply tolerated.

"I began to practice in my home town where I had graduated from the High School. Consequently, I had a general acquaintance and was known as a fair student and an honest worker. I think I never had any social slights because of being a doctor—if any were offered, I did not recognize them.

"A woman practitioner had advantages as well as disadvantages. The ordinary man, going forth at night for a doctor, did not stop at her door—he had no confidence in a woman. In the pioneer days, the woman physician was called in because the patient especially wanted a woman, or because some grateful patient had recommended her. Thus she escaped the dead beat and the generally undesirable, and thereby received a large per cent of her charges without offensive methods of collection.

"In the early days, there were few specialists —all were general practitioners, and the woman doctor who had only ordinary skill found it necessary to be a little more prompt, a little more solicitous than her medical brother, in order to hold her patient. It was necessary for her to establish a personal relation as well as the professional. Often she found it advisable to do what is now the duty of a nurse—nurses were not always available in the early days. Nearly all the young medical men were kind and cordial, willing to meet in consultation and no more critical of the women than of each other.

"The pioneer medical woman needed to be prepared to meet all kinds of storms—rain or wind were no excuse for delay; mud and snow had to be waded through. There were few paved streets in town and none in the country. In fact, if she was a success, she had to meet emergencies of many kinds and overcome them with tact, skill, and courage."

Dr. Woods did not include in her mention of the Woman's Medical College Hospital an anecdote pointing still further to the unmitigated prejudice against women as physicians, and the sarcasm to which they were constantly subjected.

Two pompous gentlemen visited the hospital and were shown around by a lady interne. Haughty and barely tolerant of the situation, one of them asked of the interne, "Tell me, doctor, is there *anything* male about this institution?" Quick as a flash she replied: "O yes, sir! The cat's a male!!!"

Although not in active practice, Dr. Woods is by no means inactive. As she handed me the manuscript of the above article, she said laughingly, "Now I can put some time on that play I am writing for the Women's Club, and then I'll turn actress!"

Her unconquerable determination and persistent activity recall the immortal "Mrs. Wiggs of the Cabbage Patch," who said of herself: "I suppose it'll be with me just like it was with father's old hoss; he kep' on goin' an' goin' till at last he died standin' up, and even then they had to push him over."

Another of the same caliber is Dr. Peter Barkey. Though nearing the 80's, he is still active, being now in his fifty-second year of continuous work. Dr. Barkey was health officer for years and, as president of the Erie County Medical Society twenty years ago, he is largely responsible for its being on the solid basis on which it finds itself to-day.

For the sake of atmosphere, forget Erie's 112,000 people; its hundred miles of paved streets; its skyscrapers, and its city and interurban trolley systems. Think of a little town with all dirt streets, an apple orchard on State Street a half block from where two modern 14-story buildings stand to-day, and *a* street car running (?) six blocks with a mule as motive power, and you will appreciate the more Dr. Barkey's contribution to this reminiscence, recalling the difficulties of practice fifty years ago.

"There were no hospitals, no nurses, no health regulations. Every physician had a drug store or a dispensary. If a physician was foolish enough to write a prescription, the patient, on presenting it, would be questioned about it and its intended purpose, and offered something not just as good, but far better. An older physician, called in consultation, put on his superior air, disagreed with everything that was being done, gave sparse advice as to what should be done, and retired. A few hours afterward, he returned to the home and advised the family to dismiss the young man and take a man of large experience—himself, for instance!

"In cases of illness requiring constant attention, more than the family could give, a maiden aunt or sister was called upon to serve as nurse. Upon the physician's daily rounds, he was regaled with tales of many such cases having been cured by this and that, and certified to by all the old gossips of the neighborhood.

"A physician had no assistant except some young man who was about through high school and desired to become a doctor. He engaged to "read medicine" for a year or two with some physician, do his reading in the physician's office, and assist in such minor surgical cases as came to the office. Major cases were taken care of in the home, when a physician from a near-by town was invited to witness the operation and assist in the minor parts as occasion required.

"In epidemics, such as smallpox, the physician was the factotum in the battle. His nurses were men and women who were pock-marked. The cases were treated in the home, and when they had no home, a pesthouse was called into service by utilizing a barn or outhouse that could be heated and afterwards burned as a means of fumigation.

"The ten years from 1870 to 1880 were free-for-all. There were no practice laws. In 1881, all practicing physicians were required to register at the prothonotary's office. The requirements were either a medical school diploma or ten years' medical practice. As a result, every drug store man in the city qualified and thereafter prescribed across the counter.

"In the very early days, there were no specialists. All work of repair was done by the physician and surgeon—one and the same person. Teeth, however, were not repaired—they were extracted, and by the physician. (I have my forceps yet.) Crossed eyes were straightened, tonsils enucleated, breasts removed, limbs amputated, instrumental deliveries in obstetric cases (midwives were more in evidence in the normal cases) all by the same person in the everyday routine of his work.

"The family doctor was a man of parts in those days—a man of influence, and, if you could find him sober, was a wonder-worker. The family doctor is coming back some day—soon.

"In cases of sickness, the one rule was: 'Keep the head cool, the feet warm, the bowels open.' Castor oil, cinchona bark, calomel, aloes, nitrate of potash, and soda bicarbonate, were all sheet anchors and found in every saddle bag."

Still another angle of the difficulties in the early days is recalled by Dr. David N. Dennis, who came to Erie in 1885 as the first specialist in eye work. If the general practitioner felt that no other general practitioner had any right to be in town, he was equally certain that the specialist had no right even to life itself.

Dr. Dennis is a native of Massachusetts. There, in the early days, a reputable physician was always a member of the local medical society. A committee was appointed by the society to examine into the fitness of the applicant to practice medicine. One who did not endeavor to become a member of the society was at once branded a quack. This was the first step toward raising the standard of the profession.

Dr. Dennis reminds us that the early meetings of the Erie County Medical Society were held in the old Y. M. C. A. building where the present Y building stands, and that, in the middle 80's, when he became a member, Dr. J. L. Stewart was president, and Dr. Clark, secretary. The following data were gotten from Dr. Dennis in a most interesting interview recently:

Dr. Brandes, one of the outstanding men of his day, started on an extensive tour from New Orleans when a junior in medicine. He had letters of credit from a New Orleans banking house, but upon reaching Erie, found that the house had failed and he was stranded. Six months was the earliest he could hope to get word to Germany, his home, and a return message, so he decided to practice while waiting.

In due time the money arrived, but, as Dr. Brandes put it, "By the time I got the money, I didn't vant to go back—I had met Miss Varfel (Warfel)," whom he shortly afterward married. He was a wonderful surgeon who coupled rare skill with excellent judgment. Not waiting for the books or the profession to say it, he met an emergency at once, boldly and fearlessly. Long before the days of tracheotomy, he saw a woman suffocating from tracheal stenosis. He did not hestiate to use his knife in cutting several rings of the trachea. A host of morbid neighbors, robbed of the chance to see a woman die in agony, became hysterical and spread the word that Dr. Brandes had deliberately cut her throat!" The outcome decided whether or not he would be mobbed—such was the feeling the gossips created. But, as Dr. Brandes said, recalling the incident, "Fortunately for me, the patient liffed!"

Through efforts of Dr. Dennis and Dr. Ira Dunn, the library of Dr. Brandes, at his death, became the nucleus of the present large medical library of the Erie County Medical Society, which now contains 1,000 volumes.

Dr. Dennis, after his graduation, was assistant to Dr. Thompson, Professor of Ophthalmology at Jefferson, and recalls with much interest, the first use of cocaine as a local anesthetic. Two two-dram bottles of solution were sent by the manufacturers, one to Dr. Thompson and the other to Dr. Agnew. Up to that time, even the removal of a foreign body made a general anesthetic necessary.

"I remember well the excitement when we heard that Prof. Thompson was going to do a cataract without ether," said Dr. Dennis. "As we saw the old lady lying motionless and heard her converse with Dr. Thompson as he operated, we were sure that she was hypnotized or had some serious lesion of her sensory centers. We crowded around her after the operation and eagerly demanded to know if it hurt, and as she insisted that she did not feel a thing, we shook our heads as we walked away."

Those were the days when the elder Gross dwelt on the importance of the appearance of "laudable pus" in the wound, and many operations did Dr. Dennis witness a little later when the attendants kept the air moist with the carbolic spray, which was the first step in modern aseptic surgery.

In 1885, there was no equipment in either hospital to do eye surgery. It was through his efforts that an ophthalmic department was established at Hamot Hospital, which has since grown to be one of the important departments of that institution.

One of the early difficulties from a specialist's standpoint, was the constant and bitter opposition of his fellows in general practice. The idea that anyone knew any more about any subject than they did, filled too large a number of them with a sort of insane jealousy which found outlet in many mean and little remarks and acts, all of which should have been beneath the dignity of professional men.

One man, in particular, was especially bitter. He was as well-known for his resplendently complete and unusually fluent vocabulary of profanity as he was for one diagnosis which he used first, last, and always—"The patient has typhomalarial fever of a masked and hidden form." This man at one time was treating with hot applications only, an extensive laceration of the cornea, through which the iris herniated. Suffering intolerably for days with no relief, the man called in Dr. Dennis in consultation. The learned physician refused to have a consultation with Dr. Dennis, but, finding that he would lose the family entirely if he did not submit, he consented. He failed to appear, however, at the appointed time, and for two hours thereafter. At length the young specialist ventured to examine the eye, whereupon the doctor put in appearance, his attack being heralded by an extensive barrage of profanity bombs. After his tirade of abuse, scorn, contempt, and sarcasm had exhausted itself and himself, he turned to the patient. "Do you want me for your family physician, or do you want this presumptuous upstart?" Such was the ethics of the day.

Another strange circumstance was the patient's demand that the specialist "guarantee a cure." If he knew enough to be a specialist, he was expected to be omnipotent, and failure to cure any case undertaken meant indifference or carelessness.

It is a matter of regret that I can pass on only this small part of the two-hour interview with this grand, young, old gentleman.

While Dr. Barkey is the longest in practice. Dr. J. E. Silliman is the oldest man in practice. Beginning his work in March, 1873, he entered upon his fifty-first year last March.

As has been mentioned elsewhere, professional jealousy and rivalry were rampant among surgeons. When an accident occurred, the doctors, unsummoned, raced to the scene and the first arrival took the case ("took" is a good word).

In his early years, Dr. Silliman was called to treat the crushed hand of a railroader. Returning to his patient after a trip to his office for dressing materials, he found an older surgeon had arrived, and, on the floor of a railroad tool house, had *amputated the arm,* using "strong-arm anesthesia."

Another time he had a case of a femur shattered from trochanter to condyles by a bullet. Drs. Stewart and D. H. Strickland were called to assist in the case. The man who did the amputation mentioned above, arrived later, and, stung with disappointment, he blurted out, "Fracture? The three S's said so? The d—n fools! Not one of them would know a fracture if they saw it!" And yet a dissection of the amputated member showed an almost unbelievable comminution of the femur.

Dr. Silliman once had a case of typhoid fever on the peninsula. Usually he made the call early in the evening, rowing the two miles across the Bay in a skiff. This was before the connecting channels had been cut between the numerous lagoons in the peninsula, to permit fish to enter these waters, and mosquitoes were so numerous that they blocked the screen doors, shutting out light and air, and hanging on the door-frame like a swarm of bees. (We can testify that there are still enough of them. We have seen them come out in the evening and sit on the logs and bark! And as to size—many of them weigh a pound!)

A little Frenchman, according to Dr. Silliman, practiced many years ago on the East Side of the city. He firmly maintained that all disorders were due to eating. Consequently, he invariably told the patient, on looking at his tongue, that he needed to "pook" (puke), and forthwith, gave him an enormous emetic. Each chair in his waiting room was provided with a basin, and the patients were forced to remain till the emetic had done good work. How fortunate that this was not in the days of the motion picture machine and the victrola!

Having previously learned that, in his fifty years of practice, Dr. Silliman has delivered more than six thousand maternity cases, I asked him for some of his experiences.

"Many times," he replied, "I have had to do a version unaided. The women would all run; there were no 'phones to summon help, and I had to be anesthetist, doctor, assistant and nurse. A baffled midwife called me once, and her greeting as I entered the room was, "Es steht recht! Es steht recht!" However, I examined the patient, and found a shoulder presenting. A version and rapid delivery was followed by more pains, and a second baby came. Yes, "Alles steht recht!" What a wonderful institution is the midwife! At another time, three pupil nurses were with me on a delivery. The woman had a large goitre, asthma, and such a generalized edema that her ankles looked like one's thigh. Two nurses held her in a sitting posture on a couch. The third, very much to the amusement of all three, brought me, at my request, a washtub, and then proceeded to give the chloroform. In a short time, my asthmatic, goiterous, water-logged, dyspneic patient had delivered herself of twins, each in its own sac, and enough amniotic fluid to make the tub seem worth while.

And so we might go on and on recounting experiences and difficulties encountered by these, our elder brethren. All honor to such men and women, who, blazing the trail for us, bore the brunt of the task in advancing our beloved profession! Standing intrepid, determined, meeting with throat-cutting instead of professional brotherhood, their trials and discouragements give us the twin picture of the Pilgrim Pioneers when

The breaking waves dashed high
On a stern and rockbound coast.

The trees against the stormy sky
Their giant branches tossed.
The heavy night hung dark
The hills and waters o'er
As a band of exiles moored their bark
On a wild New England shore.

And yet, as from that band of Pilgrim Pioneers came our glorious America, even so, from such dauntless, fearless, long-suffering medical pioneers, has come the wonderful, glorious, ever-broadening, ever-helpful medical knowledge of to-day.

R. S. MINERD, M.D.

24 West 9th Street, Erie Pa.

MINUTES OF THE SECRETARIES' CONFERENCE

The Eighteenth Annual Conference of Secretaries of the component societies of the Medical Society of the State of Pennsylvania was held in the Hotel Henry, Pittsburgh, and was called to order by Dr. Joseph Scattergood, Chairman, at 5:15 P. M.

The minutes of the meeting held at Scranton in 1922 were read and approved.

A nominating committee consisting of Drs. C. P. Stahr, A. F. Myers, and E. C. Buyers, was appointed by the Chairman to nominate officers for the Nineteenth Annual Conference to be held in Reading, October 6-9, 1924.

The following program was carried out:

1. The Keeping of the County Roster of Physicians, Members and Nonmembers by the Secretary of the County Medical Society. W. H. Mayer, Allegheny County.

This paper was discussed by Drs. Brenholtz, Quigley and Mayer.

2. Influencing Medical Legislation by Conference, by Component Societies or by Individual Members. Ira G. Shoemaker, Berks County.

This paper was discussed by Drs. Charles W. Richardson (member of the Board of Trustees, American Medical Association), Litchfield, Donaldson, Knowles, Brenholtz, Quigley and Albertson.

3. Is the Prosecution of Illegal Practitioners by the County Medical Society Worth While? Anthony F. Myers, Bucks County.

This paper was discussed by Drs. MacBride, Scattergood, Mayer, Knowles, and Myers.

4. Should the Medical Legislative Conference be Supported by Voluntary Contributions or by an Annual Assessment of $2.00 per Member? John E. Livingood, Berks County.

The discussion was opened by Dr. Frontz and continued by Drs. Quigley, Messinger and Mayer.

5. Affiliate Membership in County, State and National Medical Societies. Walter F. Donaldson.

Discussion by Charles C. Ross, Clarion County.

The following resolutions upon the death of Dr. Cyrus Lee Stevens were read by the Secretary:

Dr. Cyrus Lee Stevens, a man of many sides and interests, was born in 1851. He received his A.B. and A.M. Degrees from Lafayette College, afterwards locating in Smithfield, Pa. He became a tutor in natural science in Parsons College, Iowa, and later spent many months of study in European hospitals. He was Professor of Surgery and Obstetrics in Central Turkey College. For many years he was a successful general practitioner in Bradford County, Pennsylvania, at one time representing his constituents in the Pennsylvania Legislature. He was Secretary of the Medical Society of the State of Pennsylvania and Editor of the JOURNAL for 21 years, and was President of the State Society in Pennsylvania in 1919.

This in brief represents the active life and interests of the man who has done more for the Medical Society of the State of Pennsylvania than any other single individual.

Therefore be it Resolved, That the Secretaries' Conference express at this time its sincere regret at the loss of Dr. Cyrus Lee Stevens, as a member of the Society.

Further be it Resolved, That a copy of these resolutions be recorded on the minutes of the Secretaries' Conference.

Dr. Brenholtz moved that these resolutions be adopted. Seconded by Dr. Shoemaker and carried by a rising vote.

A communication was presented from Dr. H. C. McKinley, Secretary of the Somerset County Medical Society, expressing his regrets at being physically unable to attend the Conference. (Dr. McKinley who is 83 years of age October 5, 1923, was the victim of a fall through a trap door during the time that he was in attendance upon the sessions of the American Medical Association in San Francisco, June, 1923.)

During the dinner which followed the Conference, the nominating committee reported as follows: Chairman, John E. Livingood, Berks County; Vice-Chairman, Walter E. Egbert, Delaware County; Secretary, Edith MacBride, Mercer County; Executive Committee, William H. Mayer, Allegheny County; Victor S. Messinger, Northampton County, and James A. C. Clarkson, Mifflin County.

There were present 33 component county society secretaries, 4 officers of the State Society and 5 guests.

NEW AND NONOFFICIAL REMEDIES

NEW TUBERCULIN B. E. DRIED.—To obtain this product, tubercle bacilli are dried, ground for several months in a ball mill, the finely disintegrated bacillary bodies are mixed with a suitable base and made into tablets. Each table represents a definite amount of New Tubeculin B. E. Dried.

TABLETS TUBERCULIN B. E.-P. D. & CO.—New Tuberculin B. E. Dried, marketed in vials No. 1 of ten tablets, each tablet containing 0.0001 mg.; in vials No. 2 of ten tablets, each tablet containing 0.001 mg.; in vials No. 3 of ten tablets, each tablet containing 0.01 mg.; in vials No. 4 of ten tablets, each tablet containing 0.1 mg.; in vials No. 5 of ten tablets, each tablet containing 1 mg.; also marketed in packages of 5 vials, Nos. 1, 2, 3, 4 and 5 inclusive. Parke, Davis & Co., Detroit.

NEW TUBERCULIN T. R. DRIED.—The mass culture of tubercle bacteria is washed repeatedly, agitated again in water, washed, ground to complete disintegration, extracted repeatedly with water, and the water insoluble material, instead of being ground to form a suspension in water as in New Tuberculin T. R. Liquid, is dried. The dried material is thoroughly mixed with a suitable diluent. Each tablet represents a definite amount of dried tubercle bacilli.

TABLETS TUBERCULIN T. R.-P. D. & CO.—New Tuberculin T. R. Dried, marketed in vials No. 1 of ten tablets, each tablet containing 0.0001 mg.; in vials No. 2 of ten tablets, each tablet containing 0.001 mg.; in vials No. 3 of ten tablets, each tablet containing 0 01 mg.; in vials No. 4 of ten tablets, each tablet containing 0.1 mg.; in vials No. 5 of ten tablets, each tablet containing 1 mg.; also marketed in packages of five vials Nos. 1, 2, 3, 4 and 5, inclusive. Parke, Davis & Co., Detroit. (*Jour. A. M. A.*, Oct. 6, 1923, p. 1207.)

DIPHTHERIA TOXIN-ANTITOXIN MIXTURE (0.1 L+)—LEDERLE.—This product (see New and Nonofficial Remedies, 1923, p. 284) is also marketed in 30 Cc. vials. Lederle Antitoxin Laboratories, New York. (*Jour. A. M. A.*, Oct. 27, 1923, p. 1441.)

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg.
Pittsburgh, Pa.

HOUSE OF DELEGATES

The minutes of the House of Delegates published in this number should be read by each member of our Society. The actions of the House are epitomized in the reports of the House Reference Committees on Reports of Officers and Committees, Scientific Business and New Business.

In these splendid reports you will find the essence of the reports of officers and committees intelligently reviewed by studious committeemen, as well as the results of similar consideration of all resolutions and recommendations presented to the House. You should be interested in the reaction of the delegates to the following subjects: periodic health examinations; administration of iodine to children in goiter prevention by public health authorities; the creation of a commission to study existing workmen's compensation laws; and another to study laboratory conditions in Pennsylvania.

REGISTRATION AT PITTSBURGH

One thousand two hundred sixty-two members of the Medical Society of the State of Pennsylvania registered at the 1923 session in Pittsburgh, which compares favorably with the 1920 registration in Pittsburgh of 1,122.

The total registration from Allegheny County was 661. As in 1920, more than 50% of the total registration was from the Allegheny County Medical Society. Guests and visitors from other state societies who registered numbered 29. The registration in the Section on Medicine was 521; Section on Surgery, 238; Section on Eye, Ear, Nose and Throat Diseases, 159; Section on Pediatrics, 63; Section not designated, 241.

In 1920, when the Society met in Pittsburgh, the registration in the Medical and Surgical Sections was 555 and 337, respectively, while the total number registering without designating a section was 37.

The record of attendance at the various sessions of the Section on Pediatrics was 137, 93 and 109.

The only component county medical societies not represented by registration were Juniata, Monroe, Perry, Potter, Sullivan and Wyoming.

The total enrollment in the House of Delegates was 107, societies not represented being Adams, Greene, Indiana, Juniata, Lebanon, Monroe, Perry, Potter, Somerset, Snyder, Sullivan, Union, and Wyoming.

Thirty-three secretaries from component county societies attended the Secretaries' Conference and dinner, together with 4 officers of the State Society and 5 guests.

REGISTRATION BY COUNTIES

*Allegheny 661.
*Philadelphia 89.
*Washington 51.
Westmoreland 49.
*Fayette 26.
*Beaver 26.
*Cambria 24.
Armstrong 21.
*Butler 20.
*Lycoming 20.
*Lackawanna 16.
**Clearfield 14.
**Lawrence 14.
*Erie 14.
Venango 14.
*Lancaster 12.
*Dauphin 12.
*Indiana 11.
**Mercer 11.
*Clarion 10.
*Jefferson 9.
*Montgomery 8.
*Mifflin 6.
**Somerset 6.
*Montour 5.
*Chester 5.
**Bradford 5.
*Northumberland 5.
*Schuylkill 5.
**Luzerne 5.
**York 5.
*Berks 4.
**Warren 4.
**Center 3.
**Delaware 3.
*McKean 3.
*Cumberland 3.
*Susquehanna 2.
*Tioga 2.
*Columbia 2.
**Clinton 2.
Bucks 2.
**Bedford 2.
*Adams 1.

Greene 8.
*Elk 7.
*Northampton 7.
Crawford 7.
**Blair 7.
*Huntingdon 7.
*Lehigh 6.
**Carbon 1.
**Franklin 1.
**Lebanon 1.
*Snyder 1.
*Union 1.
*Wayne 1.

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*Increase over 1920.
**Decrease over 1920.

Fifty-seven counties were represented in 1923. Fifty-six counties were represented in 1920. Thirty-four counties show increase. Sixteen counties show decrease. Seven same as in 1920. Three counties were represented in 1920 and not in 1923: Juniata, Perry and Wyoming. Three counties were not represented either in 1920 or 1923: Sullivan, Monroe and Potter. Four counties were represented in 1923 and not in 1920: Adams, Snyder, Susquehanna and Wayne.

We anticipate a registration of 1,100 at Reading in 1924.

THE PROSECUTION OF ILLEGAL PRACTITIONERS

The number of complaints recently conveyed to the Board of Trustees by the various District Councilors, to the effect that the prosecution of illegal practitioners, when instigated by licensed doctors of medicine, was invariably without result, led the Board to take the following action:

> "The Board of Trustees recommends to the House of Delegates the passage of a resolution calling attention to the fact that there are certain laws regulating the practice of medicine throughout the state, the enforcement of which rests with the Board of Medical Education and Licensure, and that these laws are not being enforced by that Board."

The House of Delegates referred the above recommendation to its Committee on New Business. This committee advised and the House unanimously adopted the following resolution:

> "Whereas, The state laws pertaining to the illegal practice of medicine and the healing art in Pennsylvania are not enforced, and
>
> "Whereas, It is neither dignified nor proper for the Medical Society of the State of Pennsylvania to endeavor to enforce said laws; therefore, be it
>
> "*Resolved,* That the House of Delegates recommend and request the Board of Medical Education and Licensure to take the necessary steps for the prosecution of illegal practitioners of the healing art, and that such publicity be given this matter as the officers of the Medical Society of the State of Pennsylvania deem proper."

The Pennsylvania Act of 1911 amended in 1921 created a "Bureau of Medical Education and Licensure and provides for an appropriation to carry out the provisions of said act." Among said provisions occur the following:

> Section 1...."On first offense, any person willfully violating the provisions of this section of this act (practicing without a license), shall, upon conviction, be deemed guilty of a misdemeanor, and shall be subject to a fine of not more than five hundred dollars, or imprisonment for not more than six months in the county prison, or both or either, at the discretion of the court; on the second offense, shall be subject to a fine of not less than five hundred dollars or more than one thousand dollars, and imprisonment for not less than six months or more than one year, at the discretion of the court."
>
> Section 3...."The Bureau in lieu of action from any other source is authorized to enforce all the provisions of this act."

Apparently the duty of the Bureau of Medical Education and Licensure is clearly outlined in the act. The Medical Society of the State of Pennsylvania by its recent action indicates to the people of this commonwealth to whom they should look for riddance of the health menace created by the continuation in practice of individuals who have not legally "obtained the right to practice medicine and surgery and any of its branches."

PHYSICIANS IN RURAL COMMUNITIES OF PENNSYLVANIA

The painstaking study and admirable presentation of this important subject by Dr. Frontz in his presidential address has produced a favorable reaction in the news and editorial columns of several influential daily papers, and will, no doubt, form the basis of a useful service to the people of this state.

The House of Delegate's Reference Committee on Reports of Officers and Committees reported as follows on the address of President Frontz:

"Your Reference Committee feels that President Frontz in his opening address on 'Medical Care of the Rural Population' gave us all food for thought. His excellent recommendation that a bureau be established, either by this Society or by the State Board of Health, as a clearing house for localities needing physicians and for physicians looking for desirable locations, is an entirely practical one. We heartily recommend that the Board of Trustees take this matter under advisement."

The Board of Trustees, the following day, took action toward the installation of a clearing house in the office of the executive secretary to disseminate to physicians seeking locations in Pennsylvania, information regarding existing community demands for medical practitioners.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to October 17th:

Adams: *Removal*—Edgar A. Miller from East Berlin to 256 Baltimore Ave., Gettysburg.

Allegheny: *Removal*—George H. Gillis from Pittsburgh to Yatesboro (Armstrong Co.). *Deaths*—Charles E. Lindeman of Pittsburgh (Univ. of Penna., '99), Sept. 18, aged 54. James C. Thompson of Pittsburgh (Bellevue Hos. Med. Coll., '82), Sept. 14, aged 66. William V. M. Taylor of McKeesport (Jeff. Med. Coll., '73), Sept. 23, aged 74.

Beaver: *Removal*—Leedom Sharp from Hookstown to New Oxford (Adams Co.).

Berks: *Removal*—Thomas H. A. Stites from Alexandria to Penna. State Sanitorium, Cresson (Cambria Co.). Willard H. Spear from Robesonia to 512 Greenwich St., Reading.

Cambria: *New Members*—David S. Bantley, 635 Coleman Ave.; Horace B. Anderson, U. S. National Bank Bldg.; George W. Conrad, 516 Vine St., Johnstown.

Center: *Removal*—LeRoy Locke from Fleming to Masonic Bldg., Bellefonte.

Dauphin: *Transfer*—Maurice I. Stein, Harrisburg (formerly of New Bloomfield, Perry Co.) to Dauphin County Society. *Deaths*—John L. Good of Harrisburg (Medico-Chirurg. Coll., Phila. '15, Oct. 2, aged 33. Hugh Hamilton of Harrisburg (Univ. of Penna '71), Oct. 6, aged 76. *Removal*—Horace B. Dean from Harrisburg to 440 N. 6½ St., Terre Haute, Ind.

Franklin: *Removal*—Charles C. Custer from Cresson to Mont Alto.

Huntingdon: *Removal*—Benjamin W. Genung from Robertsdale to James Creek.

Lancaster: *New Member*—Arthur J. Greenleaf, Mountville.

Lackawanna: *New Members*—W. G. Dronin, Dime Bank Bldg.; Harry S. Mauser, 1115 Mulberry St., Scranton. *Reinstated Member*—Edmund P. Larkin, Bliss-Davis Bldg., Scranton.

Lehigh: *Death*—Robert C. King, of Hellertown (Bellevue Hos. Med. Coll. '78), Sept. 30, aged 67.

Lycoming: *Removals*—Leon J. Camche from Brooklyn, N. Y., to 185 W. Bigelow St., Newark, N. J.; Omer R. Etter from Warrensville to Medical Bldg., c|o Dr. Claire Rasor, Oakland, Calif.

Luzerne: *New Members*—Frank O'Donnell, City Hospital; John J. Gildea, 480 N. Penna. Ave.; Wilkes-Barre; Burton A. Weil, Plymouth. *Death*—Andrew T. McClintock of Wilkes-Barre (Univ. of Penna. '11), Aug. 4, aged 38.

McKean: *Removal*—Howard K. Eaman from Mt. Jewett to 13 Main St., Bradford.

Mercer: *Death*—John H. Twitmeyer of Sharpsville (Univ. of Penna. '72) from injuries following an automobile accident, Sept. 20, aged 79.

Montgomery: *Reinstated Member*—Annie R. Elliott, State Hospital, Norristown. *Death*—Edward A. Krusen of Norristown (Hahnemann Med. Coll. '87), suddenly from angina pectoris, Sept. 20, aged 63.

Philadelphia: *New Members*—Roy W. Mohler, 1427 Spruce St.; Martin J. Sokoloff, 2125 S. Thirteenth St.; Walter H. Lindsey, 4513 Spruce St.; Lewis C. Scheffey, Lansdowne (incorrectly reported in August Journal as reinstated member), Philadelphia. *Reinstated Members*—Arturo Padilla, 6159 Elmwood Ave.; John J. Stanton, 1404 N. 16th St.; J. L. Manasses, 1414 N. 15th St.; Stanley E. Biddle, 108 W. Front St. (Oil City); D. M. F. Krogh, 5923 Chester Ave.; Max Abramovitz, 165 W. Susquehanna Ave.; Robert W. Bailey, 220 W. Penn St., Gtn.; J. Bernhard Mencke, 1816 Spruce St.; Samuel Friedenberg, 717 Pine St.; J. Evans Scheele, 312 Otis Bldg.; Leonard Averett, 1016 N. 6th St; Charles W. West, 2131 DeLancey St; Abraham E. Colcher, 1425 Spruce St.; Alfred G. Marshall, 610 S. 21st St.; A. F. Hofkin, 922 N. 5th St.; Charles W. Gessler, 1311 S. Broad St., Philadelphia; Kempton P. A. Taylor, Hospital Santo Thomas, Panama. *Transfer*—Louis Tuft, 1647 So. 54th St., Philadelphia (formerly of Mayview), from Allegheny Co. Society. *Deaths*—James K. Young of Philadelphia (Univ. of Penna. '83), Aug. 28, aged 61; William C. Kessler of Philadelphia (Jeff. Med. Coll. '13), July 13, aged 45; William H. Fritts of Philadelphia (Bennett Med. Coll., Chicago, '81), July 22, aged 64. *Removal*—Marian O'Harrow from Iowa City, Iowa, to Hatfield House, Smith College, Northampton, Mass.

Venango: *Removal*—William E. Fawcett from Rockville, Ind., to Hasson Heights, Oil City.

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since September 25th. Figures in first column indicate county society numbers; second column, State Society numbers.

Sept. 25	Luzerne	236-238	7268-7270	$7.50
26	Lackawanna	233-235	7271-7273	7.50
30	Philadelphia	1945-1964	7274-7293	92.50
	Philadelphia (For 1922)	2022	7329	5.00
Oct. 15	Cambria	137-139	7294-7296	7.50
	Montgomery	155	7297	5.00
	Lancaster	129	7298	2.50

FREDERICK L. VAN SICKLE, M.D.

Executive Secretary

230 State St., Harrisburg

LEGISLATIVE PREPAREDNESS

The House of Delegates of our State Society at its recent annual session received the reports of the various committees, among them being the Committee on Public Health Legislation.

In addition to reciting some of the difficulties encountered during the 1923 session of the legislature, this report urged the necessity for every member of the profession to take part in the elections of the state and county. It also urged that more activity and interest be developed in the profession so that all measures pertaining to the health and welfare of the people of the Commonwealth should receive attention, the profession become informed and the work of the committee sustained.

We desire to enlist the active coöperation of every earnest medical doctor in this state to prepare *now* for the 1925 session of the Legislature of Pennsylvania. We will not argue the point with some of our confreres, that it would be better to cease our activities in legislative matters. We have worked too long and too hard to relinquish the position which we have attained in the Legislature of this state. To some this position may not be satisfactory and is open to criticism. We affirm, however, that if we are supported by active energetic work on the part of our medical friends in each county, the Medical Legislative Conference will obtain the desired results ultimately.

It is true that we failed in amending the Workmen's Compensation Act of 1915, but now is the time and the opportunity for every industrial physician and surgeon in the state who has a complaint in regard to this law, to voice his sentiments as to how the law should be changed and assist the Conference in such a way as will bring the desired pressure and influence to carry the necessary amendments in the 1925 Legislature.

It is of vital importance if we are to refrain from interfering in legislative matters in the future that a preliminary and premedical standard be established in this state during the next session of the legislature. We may term this a "One Board Bill" or whatever title it may receive, but it is absolutely necessary with present conditions that this state be brought up to the present standard of the times by the enactment of a measure which will eliminate to the greatest extent the bickerings, controversies and ill feeling engendered in the bi-annual scrap which is entered into during each session of the legislature. If standards of preliminary, premedical and subsequent education in the healing art are fixed in terms which shall include all those who desire to practice the healing art, leaving the provisions for the application of therapy to the individual boards, bureaus or committees, we will obtain the desired results.

Such a plan cannot be put into execution without the united, whole-souled, purposeful influence of every doctor in good standing in each county of the state. It will require funds as well as a reasonable amount of time to be devoted to this purpose. If these cannot be obtained, it would seem to us that the Medical Legislative Conference should be in possession of such information and cease to waste their time in an effort which does not produce results.

We have been fortunate in this state during the past six years to have some splendid laws placed upon the statute books, and our opponents have failed to nullify the practice of the healing art in vaccination and vivisection as well as in many other ways, so that we feel the future offers an equal opportunity to do good work in the interests of the people of this Commonwealth and to establish in the minds of those people the real attitude of the medical profession in legislative affairs.

It is our earnest hope that it will not be necessary to make many appeals in the future to awaken an interest in legislative preparedness and bring out a strong, supporting and helpful influence in our ranks. We trust you will place your opinions and desires before your committees on public health legislation of your county societies and then let us know the results of your discussions.

SCIENCE STUDIES, NEW METHOD TO WASH YOUR FACE

"Palmolive Fellowship" to Reveal Secrets of Soap at Cornell University

Milwaukee, Wis., Oct. 9, (Special)—Chemical authorities in the universities have decided that the American people must be taught how to wash their faces and their family linen scientifically.

For the first time in history, a concerted effort to experiment with the detergent action of soaps will be launched this autumn in the great laboratories of Cornell University, as the result of the announcement of the winner in the first "Palmolive Fellowship" by a group of leading scientists and chemical authorities here to-day.

Paul H. Fall, 5600 Drexel Boulevard, Chicago, has just been awarded the $2,000 fellowship, to be given annually by The Palmolive Company, so that he may devote himself to the purely scientific study of the chemistry, physics and colloid principles affecting soaps. Mr. Fall, himself a college professor, has decided to make his experiments at Cornell University, according to an announcement to-day by Prof. Victor Lenher, professor of chemistry at the University of Wisconsin, a member of the distinguished "Palmolive Fellowship" Committee.

Prof. Fall will be assisted in his research studies in soap by W. B. Bancroft, professor of chemistry at Cornell. He will attempt to uncover the secrets of soap, new ways to manufacture it so that it may be used with scientific accuracy in cleansing the skin, as well as clothing, woodwork, dishes, etc. This experimenting in the college laboratory will be of great assistance to the entire soap manufacturing industry, according to Professor Lenher.

"Scientists to-day are intensively studying the chemical effects of our daily foods, the clothes and shoes we wear, new ways to get more power out of the gasoline for our automobiles, better ways to make all of our daily necessities," said Professor Lenher. "So why has there never been a concerted effort to study soap, too? We expect great things of this scientific project. It may even change the cleansing habits of the nation. But we can say nothing more until after the first year of the fellowship has ended."

BUBBLES

"The world's a bubble, and the life of man,
Less than a span."—*Bacon.*

The treatment for heart trouble usually includes rest; but the best remedy for a broken heart is hard work.

We used to know a doctor who was very thin, and he always said that people only got fat because they were lazy and ate too much. But when he got fat himself—it was an inherited tendency!

No wonder this is a brainless age; we have substituted gasoline for horse sense.

No matter how much we reduce the death rate, just as many people will die as die now—in fact everybody that is born will die sometime.

After three years of chasing the elusive hyphen, the Editor readily understands why the insane hospitals are so thickly populated.

Why is it that doctors who don't smoke or drink coffee say they are injurious, while doctors who like these indulgences say they are beneficial?

COUNTY MEDICAL SOCIETIES

Adams—James P. Dalbey, M.D., Gettysburg.
Allegheny—Lester Hollander, M.D., Pittsburgh.
Armstrong—Jay B. F. Wyant, M.D., Kittanning.
Beaver—Francis H. McCaskey, M.D., Rochester.
Bedford—N. A. Timmons, M.D., Bedford.
Berks—Clara Sbetter-Keiser, M.D., Reading.
Blair—James S. Taylor, M.D., Altoona.
Bradford—Stanley D. Conklin, M.D., Sayre.
Bucks—Anthony F. Myers, M.D., Blooming Glen.
Butler—L. Leo Doane, M.D., Butler.
Cambria—Joseph J. Meyer, M.D., Johnstown.
Carbon—Jacob A. Trexler, M.D., Lehighton.
Center—James L. Seibert, M.D., Bellefonte.
Chester—Henry Pleasants, Jr., M.D., West Chester.
Clarion—H. A. Wick, M.D., New Bethlehem.
Clearfield—W. E. Reiley, M.D., Clearfield.
Clinton—Clair B. Kirk, M.D., Mill Hall.
Columbia—C. B. Yost, M.D., Bloomsburg.
Crawford—Cornelius C. Laffer, M.D., Meadville.
Cumberland—Calvin R. Rickenbaugh, M.D., Carlisle.
Dauphin—W. Minster Kunkel, M.D., Harrisburg.
Delaware—George B. Sickel, M.D., Chester.
Elk—Joseph E. Madara, M.D., St. Marys.
Erie—Anna M. Schrade, M.D., Erie.
Fayette—Hugh Ralston, M.D., Uniontown.
Franklin—Samuel D. Shull, M.D., Chambersburg.
Greene—Thomas B. Hill, M.D., Waynesburg.
Huntingdon—John M. Keichline, Jr., M.D., Huntingdon.
Indiana—H. Boydston Smith, M.D., Blairsville.
Jefferson—W. A. Hill, M.D., Reynoldsville.
Juniata—W. H. Banks, M.D., Mifflintown.
Lackawanna—G. A. Clark, M.D., Scranton.
Lancaster—J. Sullivan, M.D., Lancaster.
Lawrence—William A. Womer, M.D., New Castle.
Lebanon—W. Horace Means, M.D., Lebanon.
Lehigh—Willard C. Masonheimer, M.D., Allentown.
Luzerne—H Irvin Evans, M.D., Ashley.
Lycoming—Wesley F. Kunkle, M.D., Williamsport.
McKean—Francis DeCaria, M.D., Bradford.
Mercer—M. Edith MacBride, M.D., Sharon.
Mifflin—F. A. Rupp, M D., Lewistown.
Monroe—Charles S. Flagler, M.D., Stroudsburg.
Montgomery—John C. Simpson, M.D., Norristown.
Montour—John H. Sandel, M.D., Danville.
Northampton—Wm. A. Finady, M.D., Bethlehem.
Northumberland—Charles H. Swenk, M.D., Sunbury.
Perry—A. R. Johnson, M.D., New Bloomfield.
Philadelphia—Franklin M. Crispin, Philadelphia.
Potter—Ross H. Jones, M.D., Coudersport.
Schuylkill—Arthur B. Fleming, M.D., Tamaqua.
Snyder—John O. Wagner, M.D., Beaver Springs.
Somerset—H. Clay McKinley, M.D., Meyersdale.
Sullivan—P. G. Biddle, M.D., Dushore.
Susquehanna—Robert B. Mackey, M.D., Montrose.
Tioga—H. A. Vosburg, M.D., Arnot.
Union—Oliver W. H. Glover, M.D., Laurelton.
Venango—John F. Davis, M.D., Oil City.
Warren—M. V. Ball, M.D., Warren.
Washington—Charles C. Cracraft, M.D., Claysville.
Wayne—Hugh Stevenson, III, M.D., Honesdale.
Westmoreland—D. Allison Walker, M.D., South West.
Wyoming—Herbert L. McKown, M.D., Tunkhannock.
York—Maurice C. Wentz, M.D., York.

November, 1923

COUNTY SOCIETY REPORTS

BERKS—OCTOBER

The Berks County Medical Society was favored at its October meeting by an address on "Cancer of the Uterus," by C. H. Shearer, M.D., of which an abstract follows:

Cancer of the cervix, when clinically diagnosed, is invariably too late for cure. When such symptoms as hemorrhage, odor, pain, loss of weight, etc., appear, it is invariably too late.

All women with pelvic symptoms should have a careful pelvic examination. With the ease with which the parts can be exposed to both sight and touch, and with cancer always uppermost in one's mind, it would seem almost unpardonable to overlook it. Any suspicious area should be excised and sent to a competent pathologist for microscopic confirmation. This simple little operation can be carried out in any ordinary office examination, and neglect thereof will many times prove fatal.

The lesion of cancer of the cervix is primarily local, and it is in this premetastatic stage alone that we can hope for cure. When the suspected section is confirmed by the microscope prompt action is necessary, for no human can foretell the moment our natural resisting forces—tissue resistance, the lymph system, and the cancer immunity that we all possess—will break before the invading forces of the enemy, cancer.

There are two diseases of the cervix which so closely simulate cancer that a correct diagnosis is difficult from clinical signs alone. These diseases are syphilis and tuberculosis. Here, again, the microscope is of service in differentiating. In our clinic, we find cancer of the cervix so frequently complicated with syphilis that we routinely do Wassermanns. Tuberculosis of the cervix is rare in our community and is usually diagnosed cancer.

Carcinoma of the body of the uterus is quite a different proposition. Here we have a lesion we can neither inspect nor palpate and which is most difficult even for the expert to differentiate. We have many intra-uterine conditions to obscure the diagnosis, of which degenerations and neoplasm are the most frequent. Diagnosis is all the more difficult when we have a carcinoma overshadowed by a myoma. Here the menorrhagia may completely obscure the metrorrhagia of the cancer. Again, all suspicious cases should be thoroughly curetted and referred to the laboratory for confirmation. We cannot depend upon macroscopic pathology for a diagnosis; it takes the microscope to diagnose cancer early enough to make surgery lifesaving.

Our ignorance of the cause of cancer and our inability to recognize the disease sufficiently early make for a bad prognosis. If we hope to make any impression on the cancer mortality (1) Every woman with pelvic symptoms, irrespective of age, must have a thorough pelvic examination. (2) Every woman with a leukorrhea or metrorrhagia must be considered potentially malignant until proven otherwise. (3) In all suspicious cases tissue must be excised and uterine scrapings, if needed, must be referred to a competent pathologist for study. The microscope must be our court of first and last appeal. (4) We must realize that in cancer such conditions as hemorrhage, odor, pain, loss of weight and age of the lesion mean death. (5) The profession and the laity must be roused to a realization of these simple truths.

Treatment is as yet unsatisfactory. Complete removal by surgery or actual cautery are the operations of choice, followed by radium and x-ray. In inoperable carcinoma of the cervix radium and the x-ray are always valuable. With earlier diagnosis and a better understanding of what radium and the x-ray will do, these elements may eventually supersede surgery in cancer of the cervix. In malignant diseases of the fundus, surgery will in all probability be the first choice.

I know of no condition where the harmonious coöperation of surgeon and pathologist is so essential to life saving as that of cancer. Give your pathologist all the facts in the case; tell him you suspect cancer that he may be on his guard to make a thorough and painstaking search. If you differ in your opinions, keep the patient under observation, and if symptoms recur, repeat the search for cancer.

In the course of his paper, Dr. Shearer cited several cases illustative of his points, after which a full discussion followed.

Clara Shetter-Keiser, M.D., Reporter.

BUCKS—SEPTEMBER

On the afternoon of September 20th the Bucks County Medical Society celebrated its 75th anniversary at the Doylestown Country Club, followed by a banquet at the Fountain House in the evening. After a delightful lunch, Dr. J. A. Weierbach, president, called the meeting to order, giving a short résumé of the events which lead up to the founding of the Society, and introducing Dr. Hobart A. Hare, of Philadelphia, as the first speaker on the program.

Dr. Hare's alloted subject was "Medicine, 1884-1923, Then and Now." In an interesting and well-delivered talk he rehearsed the progress of medicine in the past three-quarters of a century, dwelling particularly upon the progress that has been made in the control and treatment of disease. As an example of this, he compared old mortality records of diphtheria, when from 60 to 70 per cent of all victims of the disease died, with the records of to-day, when less than 2 per cent die. The speaker also cited the mortality rate attributed to typhoid, particularly in war, giving as his comparison with to-day's mastery of the disease, the figures shown in the medical reports of the Boer War, when out of 208,000 British soldiers in the field in South Africa, 58,000 were brought down with typhoid fever, of whom upwards of 8,000 died. In the World War the British army in the field numbered a million and a quarter men, and of the 7,000 stricken with typhoid, not more than 250 died.

Dr. Hare referred to Dr. Joseph Leidy and that great physician's minute study and drawing of the flora and fauna of the intestinal contents of mammals, and gave a very interesting and instructive description of how the white corpuscles in the blood loiter along the walls of the veins and arteries to attack and feed upon destructive bacteria which have found their way through the flesh.

In closing, Dr. Hare made a plea for more art and less science in the process of diagnosis—more training in the ways of the famous Dr. Da Costa, who, without resorting to laboratory inspection, could detect the signs of certain diseases almost by instinct.

Dr. Howard Pursell, of Bristol, read a full account of the founding of the Bucks County Medical Society and of the principal events throughout its history, together with short eulogies of its influential members.

"Agreeably to public notice," according to Dr. Pursell, "a number of physicians of the county met at Newtown on Wednesday, June 14, 1848, to consult upon the propriety of forming a medical society. Dr. Phineas Jenks, of Newtown, was appointed chairman, and Dr. Charles Mathews, of Doylestown, secretary.

"On motion it was resolved that 'it is expedient to form a medical society to be called the Bucks County Medical Society.'

"On motion of Drs. Hendrie and Foulke, a constitution and by-laws were read and, after much discussion and alteration, adopted.

"Nineteen physicians signed the constitution. The first one was Phineas Jenks, of Newtown, University of Pennsylvania, 1804.

"On motion of Dr. Mathews, it was resolved that when the society adjourns it adjourn to meet in Doylestown, June 28th, at 11 o'clock—Charles Mathews, recording secretary."

The adjourned meeting was held in Doylestown when eight more members were admitted.

Since its origin, Dr. Pursell stated, 248 physicians have united with the society.

Dr. Pursell paid a glowing tribute to Dr. Anthony F. Myers, of Blooming Glen, and his charitable work as secretary and treasurer of the society.

Following Dr. Pursell's address, Mrs. John A. Logan, wife of Dr. John A. Logan, of Hatboro, and an accomplished violinist, entertained the audience by playing one of Chopin's Nocturnes, with Miss Anna Logan at the piano. The number was exquisitely rendered, and an encore demanded. A few brief remarks were then made by Dr. Anthony F. Myers.

"Surgery, 1848-1923," was the subject of the illuminating address given by Dr. Wilmer Krusen, former Director of Public Health, Philadelphia, and now Professor of Gynecology at Temple University.

Dr. Krusen recited the history of his profession briefly, but dwelt at length upon what he claimed to be the most important decade in medicine, 1840-1850. It was then, Dr. Krusen said, ether was first used as an anesthetic, but failed to receive the recognition of the profession because the physician who used it did not make the fact known until some time afterward. Dr. Oliver Wendell Holmes' (The Autocrat of the Breakfast Table) essay on infection brought forth much discussion and debate—all to the advantage of the author. During this decade oxide gas was first used in dentistry, a patient died from the effects and the dentist committed suicide.

Dr. Krusen painted a vivid picture of the progress of medicine and medicinal treatment. He mentioned Florence Nightingale, the heroine of the Crimea, as the founder of scientific nursing, and described the horrors of a pre-antiseptic operation as it was performed in those dark days. Lister and Pasteur and various other pioneers of note were mentioned by Dr. Krusen as being veritable emancipators of mankind.

The banquet at the Fountain House at seven o'clock was a success in every way, due largely to the efforts of Dr. Frank B. Swartzlander, of Doylestown, who designed the attractive cover for the program with almost professional feeling and who otherwise expended his energies to make the day a memorable one.

Dr. John B. Carrell, of Hatboro, presided as toastmaster and carried the honor with all the dignity of which he is eminently capable.

The first speaker called upon was Hon. Harmon Yerkes, former judge of the Bucks County Courts, who responded to the toast, "Keep Out of Law."

Dr. John B. Dever, Emeritus Professor of Surgery, University of Pennsylvania, and dean and daddy of them all, responded to the appropriate toast, "Ouch, It Hurts!" Dr. Dever said that the suppression of the exclamation contained in the title of his toast on the part of the patient might be laid on the doorstep of anesthesia, but that the physician and the surgeon continued to be subjected to a feeling of keen regret, expressed by "Ouch, It Hurts!" when things went wrong in the treatment of those whom anesthesia had silenced.

Mrs. John A. Logan then took up her violin and played Kreisler's "Liebestraum" with much feeling, and, for an encore, "The Melody," by Brigadier-General Charles Dawes.

Secretary of Health Miner was then called upon. Dr. Miner talked at length on the aims of the State Department to propagate health through many channels, such as curbing the pollution of streams and dispensing free toxin-antitoxin for innoculation of children against diphtheria, and mentioned the fact that since the inception of the department in 1906 the mortality rate of typhoid fever in this state had been reduced 92 per cent, of tuberculosis 41 per cent, and the infant mortality 21 per cent.

Dr. Miner was followed by Dr. J. Fred Wagner, of Bristol, who responded to the toast, "Shake Before Taking," after which Dr. Roscoe C. Magill, of Newhope, whom the toastmaster referred to as the Joseph H. Choate of the Bucks County Medical Society, touched briefly upon "Those Who Have Crossed the Bar."

Hon. William C. Ryan, of Doylestown, President Judge of the Bucks County Courts, responded with eloquence and characteristic humor to "The Bench and the Doctor," and Dr. Alfred E. Fretz replied to the toast, "The Good Member."

Dr. Charles P. Noble, of Philadelphia; Dr. Harry Dever, Dr. Alexander, Dr. F. B. Swartzlander, Dr. George M. Grim, Dr. Summer, of Trenton, Dr. Krusen and Dr. Adams of Trenton, were then called upon in turn, and after a brief and impassioned "Au Revoir" by Dr. Anthony F. Myers, the gathering dispersed.

CHESTER—SEPTEMBER

The regular monthly meeting of the Chester County Medical Society was held at Oxford, Pa., September 19th. The meeting was preceded by a delightful chicken and waffle dinner at the Oxford Hotel which was enjoyed by a fair number of the members who came from distant parts of the county.

Dr. E. L. Eliason of Philadelphia read a most interesting paper on finger-end infections, illustrating his descriptions by several blackboard drawings. His comprehensive outline of the anatomy of the finger gave his hearers an entirely new conception of the etiology and prognosis of the different types of infection so frequently encountered in general practice. He laid particular emphasis on the fact that the plantar surface of the distal phalanx is divided into several partitions by fibrous bands connected with the periosteum. These bands run longitudinally and diagonally, making roughly rectangular compartments. When infection enters one of these compartments through the true skin it tends to work its way rapidly towards the periosteum. The pain and throbbing is often disproportionately great as compared with the evidence of injury and actual swelling. The danger of such lesions is that they are frequently neglected for forty-eight hours, giving the infection time to extend into the bone. Often when treated surgically the incision is not sufficiently free, and does not open all of the infected compartments. The safest and best plan is to give a general anesthetic and lay open a flap of the entire finger end by an incision running parallel to the edge of the nail. This allows free drainage of every infected compartment and saves the bone absolutely. From a cosmetic standpoint the result is excellent.

Dr. Eliason showed several photographs of infections and copies of x-ray photographs of bone destruction within two days of injury. He also gave many practical suggestions for handling other minor infections of the finger.

The paper was discussed by many of the members present who voiced their appreciation of the clarity with which this seemingly insignificant but highly important subject was presented.

Dr. J. C. Kern of Philadelphia favored the Society with an informal talk on "The Newer Conceptions of Asthma and Hay Fever." His presentation of this most timely subject was concise and practical as well as being perfectly frank. In dealing with the etiology of these conditions he laid great emphasis on the importance of the history of the cases. It is essential to know some of the minutest details of the patient's life and habits. He cited one instance where the dust of one particular room in the patient's house caused attacks of asthma. He considered that food allergy was of less importance than sensitiveness to dust and plant pollens. He also claimed that many of the chronic winter and summer asthmatic cases were aggravated by superimposed bacterial infections. These cases were often improved by long continued treatment by bacterial vaccine or bacterins.

A hearty vote of thanks was extended to Drs. Eliason and Kern by the Society.

Henry Pleasants, Jr., M.D., Reporter.

CRAWFORD—SEPTEMBER

On September 15th at the Saegertown Inn, Saegertown, Pa., the Crawford County Medical Society entertained members of the Erie, Warren, McKean, Mercer, Venango and Mahoning (Ohio) County Societies.

Of the 140 present, 122 were physicians and surgeons from these districts. The meeting was one of the largest held in this section for years, and one of the results was the reorganization of the old Northwestern Pennsylvania Medical Society.

The main address of the day was delivered by Dr. Charles Gordon Heyd, Surgeon in the New York Postgraduate Medical College and Hospital, on the subject of "A Résumé of Our Clinical Knowledge of the Gall Bladder, Appendix and Stomach," and illustrated by a number of lantern slides. The address was a most excellent one and was greatly enjoyed by all.

ELK—SEPTEMBER-OCTOBER

The Society met with the dentists of this section in September at St. Marys. "Focal Infection from the Dentist's Standpoint" was discussed, and it was some discussion.

Dr. Brenholtz, District Counselor, was present and gave us a very snappy talk, full of good things. Unfortunately those who might have benefited the most were, as usual, absent.

In October we met at Johnsonburg. Dr. Dye of Elbon gave a talk on "Influenza, Its Complications and Treatment."

Dr. Warnick gave a talk on obstetrics, making a strong plea for prenatal care, for a complete physical and serological examination of each prospective candidate for marriage, requiring those who were authorized to perform marriages to take out a license and inflicting penalties on them if they married couples without seeing that all the regulations were complied with, and for the unsexing or sterilizing of defectives, etc.

S. G. Logan, M.D., Reporter.

ERIE—OCTOBER

The Erie County Medical Society met October 9th, at the Fairview M. E. Church at 4:00 P. M. for a business session and round-table discussion. The subject of the latter was "The Patient." The following aspects were considered:

1. When should the general practitioner refer a patient to one of the various specialists?
2. Where does the obligation of the general practitioner begin? Where should it end? When should it be resumed? When ended?
3. Where does the specialist's obligation begin? Where does it end?
4. What basis and what stand in these matters is the best for the interests of both physician and patient?

Following the discussion a chicken dinner was served by the ladies of the church. It was a pleasant and successful meeting. Anna M. Schrade, Reporter.

LUZERNE—SEPTEMBER-OCTOBER

The regular meeting of the Luzerne County Medical Society was held in the Medical Building on September 5th, and was called to order by President Schappert at 8:40 p. m.

The president reported the death during the summer months of two members of the Society—Dr. P. A. Parfitt of Nanticoke and Dr. A. T. McClintock of Wilkes-Barre. The president appointed the following committees to draw up resolutions on the death of Dr. Parfitt: Drs. H. A. Smith, G. E. Baker and Albert N. Thomas; on the death of Dr. McClintock: Drs. Gibby, George W. Carr and James T. Williams.

Dr. Rynkiewicz gave a most interesting lantern slide demonstration of interesting cases observed in the x-ray department of the Nesbitt West Side Hospital. This was discussed by Dr. L. L. Rogers, Jr.

The second regular meeting of the Society was held in the Medical Building on September 19th, and was presided over by President Schappert. There were sixty-three members present and two visitors.

Dr. Fischer gave a quarterly report for the Committee on Practice of Medicine. Dr. Malcolm Guthrie read a report for the Committee on Public Health and Legislation, describing the work in various fields. Drs. Francis T. O'Donnell, John J. Gildea and Burton A. Weil, were elected into the Society.

Dr. Donald Guthrie of the Robert Packer Hospital, Sayre, Pa., read a paper entitled "The Cardinal Symptoms of Duodenal Ulcer." This paper was discussed by Drs. S. P. Mengel, E. L. Meyers, R. R. Janjigian, Sheridan, L. L. Rogers, Jr., and Walter Davis, the discussion being closed by Dr. Guthrie. It was moved by Dr. Meyers and seconded by Dr. Stewart that the society give a rising vote of thanks to Dr. Guthrie for his excellent paper. Carried.

The October meeting was held on the 3d, with 75 members and 3 visitors present. Dr. Drake reported for the program committee that on October 17th, Dr. J. B. Wolfe and on November 7th, Dr. R. N. Clark would read papers.

The secretary read a letter from Dr. Charles H. Miner, State Secretary of Health, concerning the distribution of toxin-antitoxin to physicians for use in private cases.

Drs. G. E. Baker and R. R. Janjigian then read most interesting and comprehensive papers on "Diabetes and Insulin and its Use in the Treatment of that Disease." These papers were discussed by Drs. Daley and Edward Bixby. H. Irvin Evans, M.D., Reporter.

PHILADELPHIA

September 26th

Meeting called to order by the President.

The Tonsils and Tonsillectomy; Historical Considerations.—This paper was read by Dr. Francis R. Packard, and began with a description of the method for removing indurated tonsils, written in 25 B. C. by Celsis in his "de Medicina." Another operation, using a hook with which to perforate and drag out the tonsil, was described by Paul of Egina about 625 A. D. In the eleventh century the Arabian school recommended the actual cautery, and six centuries later Richard Weismann tells of an operation wherein the tonsil is drawn out, ligated and excised with wire, escharotics or cautery. About this time also came instruments for the excision of the uvula and in 1795 a special instrument with metal sheet in a groove was devised for tonsillectomy.

Ligation was the most popular method until the 19th Century, and it is not until 1828 that Physick tells of a guillotine instrument. After a number of more elaborate instruments of this sort were invented a reaction set in and dissection and snare became the method of choice. Sluder revived the guillotine in the early part of this century.

The Tonsils as an Infection Atrium.—Dr. Lewis Fisher began his paper by saying that those structures with recesses exposed to the outside world are the most likely sites for focal infection. Rheumatism, cardiac affections and chorea are frequently connected with the tonsils. Wm. St. Lawrence found that in 42 cases which had had one or more attacks of rheumatic fever there was no recurrence after tonsillectomy in 85%; in 40 cases of chorea there was no recurrence in 50%; in 57 cases of organic disease of the heart one recurred, while 77% of the myositis cases completely recovered. The general nutrition in all of these cases improved and intercurrent disease diminished. At the Mt. Sinai Cardiac Clinic 70% of the endocarditis and rheumatism cases showed no recurrence after tonsillectomy, and one cardiac arrhythmia of two years duration was cured two months after the removal of the tonsils. Dr. D. J. Davis traced the source of infection to the tonsil in cases of chronic streptococcic arthritis, acute nephritis, acute thyroiditis, acute appendicitis, cholecystitis, multiple sclerosis and septic angina. Wood states that in 90% of tuberculous adenitis of the neck the tonsil is to blame.

The anatomy of the tonsil readily explains its frequency as a focus of infection. The surface epithelium is invaginated into crypts, with no subepithelial tissue and often no basement membrane; the lining often degenerates; the lymph supply is unusually rich; the crypts elongate, their mouths constrict and form a good culture medium for bacteria; the epithelium of the crypts allows inert foreign bodies to penetrate and enter the efferent lymph vessels. Infection may occur via the lymphatics, or possibly directly through the external jugular vein, as in the case of an abscess with necrotic tissue where there is local inflammation, clotting, the penetration of bacteria and the formation of an infected thrombus.

Indiscriminate Tonsillectomy in Children; Is it Justified?—This paper was read by Dr. Nathan P. Stauffer. In it he said that there are no laryngologists to-day who believe that all tonsils should be removed. The reasons for doubting the wisdom of tonsillectomy are as follows: 1. Indiscriminate selection of the operator by the family physician. The operation is not simple. 2. Indiscriminate objections, e. g., that the tonsil has some function and therefore should remain, that removal ruins the voice, that it predisposes to colds, that it stunts the growth, that the retention of tonsils prevents tuberculosis. 3. Indiscriminate selections, for tonsillectomy does not cure all speech defects, persistent coughs, snuffles, sinusitis, nasal twangs, chorea, arthritis or anemia. 4. Indiscriminate operators—some men operate everything, assuming that no one is harmed by a good operation, and thereby creating bad public opinion. 5. Indiscriminate tonsillectomy by the patient, e. g., those who refuse all operations, the hospital seeker, Christian Scientists or those who try all and tell none of those formerly consulted.

Dr. Stauffer gives as the five indications for tonsillectomy: 1. Mouth breathers; 2. Frequent coughs, colds or bronchitis; 3. Ear trouble, as otitis media; 4. Cervical adenitis; 5. Tonsillitis with arthritis and heart disease. He closed with the earnest advice that cases needing tonsillectomy be sent to one who knows.

The Indications for and Contraindications to Tonsillectomy in Adults by Dr. S. MacCuen Smith.—The tonsils may be a good barrier to disease or become an incubator for organisms, and should be conserved when beneficial but if diseased, complete ablation is necessary. Definite evidence of their culpability should be had before their removal, and in adults the surfaces and crypts should always be cultured. Cases of simple hypertrophy should be let alone unless obstructive, while infected tonsils, even though small and submerged and not causing systemic symptoms, should be removed. There is no age limit for the operation. The tonsil should not be removed while inflamed. Pathological tonsils of the malignant type should be treated by radium or x-ray rather than surgery. Operation is contraindicated in cases where there is no definite indication, in acute infections, when there is a large artery in the tonsil, in cardiac syphilis, cardiorenal disease, infection of the heart, blood dyscrasia, or where there is much physical prostration, muscle fatigue or severe heart valve involvement. In singers, subacute laryngitis is frequently relieved by tonsillectomy. In making the examination of the tonsil, color and size should be noted, whether submerged or not, and an effort should be made to express free pus. Excision causes little ill effect, while in many cases there are most beneficial results.

Discussion was opened by Dr. Charles A. Fife who said that the question of focal infection must be particularly stressed by a practitioner among children. Malnutrition, anemia, peevishness, cold, deranged appetites, are frequently attributed to faulty diet, teeth, growing pains, endocrins, or the mother, instead of a thorough examination first being made for a focus of infection. This should be done before such serious developments as adenitis, endocarditis, pyuria or nephritis occur. The tonsil is the most common source of infection. Other sources should be excluded, e. g., sinuses, teeth, ear, nasopharynx, appendix, gall-bladder, or the genito-urinary tract. In cases showing toxemia, where the tonsil is small, imbedded and has a glassy surface, removal is indicated. The operation is a risk, but systemic involvement is a greater danger.

Dr. S. Calvin Smith gave the cardiac standpoint on tonsillectomy in adults, or in young adults with myocarditis when the muscle involvement is due to toxins. The operation should be postponed until the acute symptoms subside. The patient should be fortified by several weeks in bed, with digitalis withheld until within a day or so of operation, when supportive doses should be given to control the excitability of the heart and bring forth the reserve power. Morphine also should be given. Local anesthetic is preferred. The condition of the heart should be thoroughly understood before prescribing digitalis.

Dr. George B. Wood stressed the difficulty in determining disease of the tonsil. After the age of one year, up to which time lymphocytes are formed in the germinating follicles, the tonsil is useless to the individual, for the other hematopoietic organs are developed. The operation is a risk; it is as dangerous as an appendectomy.

Dr. George Fetterolf said that the risk attending the operation was realized by the laryngologist more than by anyone else. The minute anatomy of the throat is too little understood. No one knows whether or not the capsule is continuous with any other tissue; whether it is single or double or can be split. Lymphectomy of the tonsil is the ideal operation.

In general discussion it was brought out that organisms, especially the streptococcus viridans, are frequently found in the rhinopharynx after tonsillectomy, and it was suggested that tonsillectomy be supplemented with a vaccine.

Tonsillectomy in cases of tuberculosis was said frequently to cause a set-back, and a local anesthetic or gas was urged when operation seemed definitely indicated.

Resolution of Sympathy.—The following resolution of sympathy was adopted by The Philadelphia County Medical Society at its meeting held September 26, 1923. Copies were ordered sent to the family of the deceased, to the Mayor of the City of Philadelphia, and, for publication, to *The Weekly Roster* and The Atlantic Medical Journal:

The members of The Philadelphia County Medical Society desire to express their deep regret at the death on June twenty-sixth of their fellow-member, Dr. C. Lincoln Furbush, Director of the Department of Health of Philadelphia. His scientific attainments in the fields of sanitation and preventive medicine were unusual. With that expert knowledge, Dr. Furbush united imagination, which broadened his views and greatly enlarged the possibilities of the activities of the Department of Health under his direction during three and one-half years. Indeed, the practical results of the well-organized and well-directed agencies of the department during that period were noteworthy.

Dr. Furbush was assistant to General William C. Gorgas, while the latter was Health Officer of Havana, Cuba, in which capacity he earned for himself, as the result of his efforts to reorganize and provide an effective sanitary code for that city, the warm encomiums of his chief. Again, during the World War, Dr. Furbush was aide to General Gorgas, Surgeon General of the United States, making trips of inspection from time to time, but responsible mostly for, and in charge of, the General's office service.

Armed with expert knowledge on all questions connected with sanitation and preventive medicine, Dr. Furbush came to the office of Director of Health better prepared to assume its duties and responsibilities than any of his predecessors, and while occupying that important office, he manifested an unprecedented industry and untiring zeal. The numerous constructive changes and improvements made at the Philadelphia General Hospital are especially noteworthy, more particularly the establishment of the new and unparalleled radiological department with its research laboratory, and of a heart clinic provided with a modern electrocardiograph station for the scientific study of cardiac diseases. Mention should also be made of the prenatal clinic, and the reorganization of the neuropsychiatric department, as well as the housing of the resident physicians in a separate building. Indeed, he may be justly spoken of as a martyr director, since there is no great room for doubt that his death was greatly hastened, if not caused, by a too great and continuous draft upon his strength and vitality. Such tragic deaths (not unknown among members of the medical profession) have a meaning and a inheritance-value which are to be highly prized.

Dr. Furbush's wisdom in all matters connected with the Department of Health, his unusual industry and his distinguished fidelity to the highest traditions of the profession, combine to make his record both brilliant and honorable—one reminiscent of the pioneers in health work.

The members of The Philadelphia County Medical Society deeply sympathize with his family in their irreparable bereavement and earnestly hope the full realization of his splendid achievements will penetrate and lessen their sorrow.

Herman B. Allyn,
Henry K. Pancoast,
Henry D. Jump,
John D. McLean,
J. M. Anders, *Chairman.*

October 10th

Meeting called to order by the President, Dr. David Reisman.

"Exophthalmic Goiter without Exophthalmus and Goiter."—This paper was read by Dr. Israel Bram, who began by saying that the diagnosis of exophthalmic goiter by eye and neck signs might be simple or might be extremely difficult. Early in the disease, phthisis, melancholia, neurasthenia, acute appendicitis, gallbladder disease and insanity are frequently blamed. Graves' disease is a chronic, rarely acute, affection due to dysfunction of the endocrin organs and vegetative nervous system, characterized by dermographia, weakness, loss of weight, with a varying degree of hyperplasia of the thyroid. In 30% of cases there is no enlargement, while 15% show no exophthalmus. Exophthalmus and goiter are frequently evidenced late; therefore Graves' disease is a better term for this malady, which is really a constitutional affection. The constant evidences of this disease are: 1, basal metabolism of over plus 15; 2, afebrile heart over 90 per minute, not reduced by sleep and digitalis; 3, emotional disturbances, mental activity increased; 4, fine tremors; 5, dermographia and hyperidrosis; 6, immunity to cinchonism. Exophthalmus may vary because of absence of the cervical ganglion whose stimulation causes the condition, or the stare may be unilateral, or one clinician's observation may differ from another's. On the other hand, the organ need not enlarge to dysfunction, or hyperplastic thyroid tissue may be elsewhere in the body, as in an ovary. Typical Graves' diseases may respond to nonoperative measures. Dr. Bram then illustrated by lantern slides typical cases, atypical cases, and cases before and after treatment.

Dr. Solomon Solis Cohen opened the discussion by saying that he had always been an advocate of the nonsurgical treatment of Graves' disorder except in late cases. Frequent erroneous diagnoses are made because of the illusive character of the symptoms, and hysteria, nervous dyspepsia and neurasthenia are often blamed to hide the physician's ignorance. There are three classes of thyroid enlargement: 1, adenoma, simple; 2, toxic adenoma, associated with hyperthyroidism; 3, Graves' disorder. Thyroid enlargement is an incident in Graves' disease, not the foundation, as it is in cases of colloid goiter. In Graves' disease there is an overproduction of qualitatively altered thyroid secretion, with possibly a deficiency of iodin, while in toxic adenoma there is a quantitative change in the secretion, with an excess of iodin. Iodin therapy, by overstimulation, may change a simple adenoma into a toxic one, while in Graves' disease iodin causes a fall in the basal metabolic rate (in one case cited, from 65 to 14). This forms a pharmacologic test to differentiate Graves' disorder from toxic adenoma. Dr. Cohen stresses tendency to retraction rather than actual exophthalmus. Autonomic imbalance in Graves' disease causes extreme reactions and absence of sweating, and an intolerance of quinin may be found.

Dr. A. C. Morgan said that also, in his opinion, all cases of goiter are not surgical, and most operated cases have persistent or recurring symptoms. Marked loss of weight, cough, heart hurry, sweating, pallor and weakness may simulate tuberculosis, and these frequently go to the sanatorium. A substernal goiter by pressure may cause atelectasis, reflex cough and abnormal dulness, and a differential diagnosis must be made by careful and extended observation, and by the use of x-ray and fluoroscope. Absence of a rise of temperature, the suggestive activity, and the afebrile heart hurry, with dyspnea on exertion and a murmur diffused to the vessels of the neck, also help to rule out tuberculosis. He stressed the value of rest in the treatment of these cases. The tendency to a decreased alkalinity and increased acidosis in the body was noted by Osler when he advised large doses of sodium bicarbonate preoperatively, with alkaline lavage and Murphy drip postoperatively.

In closing, Dr. Bram gave the six guiding principles of his treatment: 1. Remove the etiological factors, intrinsic and extrinsic, foci or psychologic. 2. Rest in bed, with three hours up morning and afternoon. 3. A diet of the non-flesh quality and ample quantity. 4. Drugs only after careful individualization, e. g., quinin, corpus luteum, posterior pituitary, luminol, iodides, suprarenal cortex or arsenic (Thyroid extract, suprarenal medulla, opiates, iodides in large doses, and digitalis in the active stage are strongly contraindicated). 5. Electricity. 6. Psychology, inasmuch as lack of tranquillity is frequently etiological. In a coöperative case, recovery can be accomplished in from six to eighteen months.

"Treatment of Hypertension" was the next paper, read by Dr. Hobart A. Hare. He divides these cases of hypertension into four groups: 1. Nervous, whose constantly maintained high blood-pressure is due to a high-strung temperament. These respond better to rest. Spasm of the arterioles fixes the muscular and to some extent the elastic coat of the vessels and the result is an arterial change. 2. Spasm and fibrosis in the smaller vessels leads in this second group to a constant rise of tension. 3. Cases wherein the fibroid change is associated with renal lesions. 4. Cases showing a condition, the sequence of high pressure, where the vessels have become thin fibrous tubes. In considering the treatment Dr. Hare said that iodides hold the process in abeyance, but may by toxic stimulation increase the blood-pressure. Salt is not contraindicated unless there is in the blood a high nonprotein nitrogen content. Electricity provided purely temporary relief. Turkish and electric cabinet baths with massage are the most valuable therapeutic agents, as the question is mainly one of equalization of circulation. In closing,

he said that he doubted the accepted standard of blood-pressure as the body adjusts itself to demands made upon it thereby establishing a pathological normal, alteration of which may be harmful.

In discussion, Dr. Wm. E. Hughes said that cardiac and arterial conditions are not synonymous with high blood-pressure and cited the absence of an increased blood-pressure in atheroma of the coronaries and in endarteritis obliterans. High blood-pressure should be regarded as a personal matter. In interstitial Bright's disease it is an essential feature; in nervous over-excitement it is a vasomotor phenomenon. The method of treatment should be governed by the etiology, whether nervous or toxic. Partial deprivation of meat is usually beneficial; the gastro-intestinal tract needs especial care; iodides are useful to control arterial fibrosis. Blood-pressure should be used merely as an index of something probably wrong.

Dr. F. A. Faught stated that the treatment of high blood-pressure is treatment of a sign or symptom. The restriction of animal foods is empirical, according to the blood content of nonprotein nitrogen. He has used thyroid extract with success, which he attributes to an increased elimination, improved metabolism, and a tendency to promote the viscosity of the blood. When the pulse pressure becomes very high, habits and diet should be carefully considered. Hot water and cabinet baths control the condition and prevent further elevation. The persistent use of Epsom salts is dangerous, since it changes the viscosity of the blood; but mildly acid solutions (boric acid ʒ ii in a quart of water) may be used as enemata with benefit. Digitalis is often serviceable when heart efficiency is impaired, especially when there is chronic passive congestion with cyanosis.

In open discussion it was brought out that electricity properly given stimulates metabolism.

Veratrin viridi was suggested as the best drug for reducing high blood-pressure, as it is a heart stimulant causing a fall of blood-pressure by influence on the vagus. It acts in cases where fibrosis prevent action of the nitrites.

In closing, Dr. Hare protested against the standardized idea of blood-pressure, and said that in the treatment of this condition bleeding is used too infrequently, although to bleed in cases of nephritis is robbery.

"Obesity and its Treatment."—Dr. James M. Anders read this paper and in it said that obesity may be caused by ingestion of too much food or by insufficient exercise. Temperament and obesity are closely related and this indicates a control of metabolism by the ductless glands. This is further indicated by what seems to be inherited obesity, and again, in the frequent increase in weight at the menopause. The basal metabolism varies and may be either plus or minus. Prophylaxis should be used especially in those cases showing an inherited tendency to fat. In considering treatment there are two groups to be considered: the plethoric type, in whom the fat-making foods (carbohydrates and fats, should be limited, and the anemic type, whose diet should be planned to promote concentration of the blood. Aside from the dietetic treatment Dr. Anders mentioned the mechanical, in which exercise should be carefuly regulated according to the case, with cabinet baths and warm or cool tub baths or showers playing an important part; and the medicinal treatment, including iron, arsenic, digitalis (if a cardiac condition), saline laxatives (especially in the plethoric), electricity, and thyroid (in myxedematous variety, especially in cases of adiposity in the female with scanty menstruation).

Dr. Solis Cohen, in discussion, stated that each case is an individual study. Some have an inherited fat tendency which should not be interfered with.

Dr. Faught said that an unrepaired lacerated perimeum is a frequent factor in obesity.

Dr. Anders closed by saying that many ladies are troubled with excess vanity rather than fat, and where there is an inherited tendency to corpulency reduction should not be attempted.

Mary A. Hipple, M.D., Reporter.

PENNSYLVANIA NEWS ITEMS

Deaths

Mrs Mattie Kennedy, wife of Dr. William P. Kennedy, of Dickson City, died on September 30th.

Dr. Joseph Abrahamson, of Philadelpiha, died on September 11th, aged 70 years. He was graduated from the University of Tomsk, Siberia, in 1871.

Dr. Robert C. King, of Hellertown, who was graduated from the Bellevue Hospital Medical College, New York, in 1878, died on September 30th. He was 67 years old.

Dr. Clinton R. Ankeney, of Philadelphia, died September 30th. He was born in 1866, and was graduated from the University of Pennsylvania School of Medicine in 1894.

Dr. William G. Leaman, of Philadelphia, who was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1889, died on September 22d, aged 65 years.

Dr. Charles D. Hunt, of Williamsport, aged 61 years, died on August 17th of endocarditis. Dr. Hunt was a graduate of the University of Pennsylvania School of Medicine, class of 1887.

Dr. Charles Zellner, of Allentown, was fatally injured in an automobile collision in New York on September 13th. He was a graduate of the Baltimore University School of Medicine, class of 1904.

Dr. James Calvin Thompson, who was graduated from Bellevue Hospital Medical College in 1882, and practiced for many years in Pittsburgh as an eye, ear and nose specialist, died on September 14th, aged 64 years.

Dr. Charles Edward Lindeman, of Pittsburgh, who was born in 1869 and was graduated from the University of Pennsylvania School of Medicine in 1899, died of pernicious anemia on September 17th. During the World War Dr. Lindeman served in the Medical Corps, U. S. Army.

Dr. Nathan Silverstein, who was an active member of the Lackawanna County Medical Society for many years, died on September 22d at his home in Scranton. Dr. Silverstein was born in 1885 and was graduated from Jefferson Medical College of Philadelphia in 1909.

Dr. Samuel H. Metzger, the oldest member of the medical profession in the city of Lancaster, died on October 7th. He was graduated from the Hahnemann Medical College and Hospital of Philadelphia in 1861 at the age of 25 years, and practiced medicine for 62 years.

Dr. Conrad Berens died at his home in Philadelphia on October 6th. Dr. Berens was a graduate of the University of Pennsylvania School of Medicine, class of 1883, and was a surgeon on the staff of the Wills Eye Hospital, Philadelphia, for 31 years. He was 65 years old.

Dr. William Van Metre Taylor, of McKeesport, aged 74 years, died of uremia on September 23d. He was a graduate of the Jefferson Medical College of

Philadelphia, class of 1873, and was formerly on the staff of the McKeesport Hospital, and a member of the board of health.

Dr. John H. Twitmeyer, of Sharpsville, died on September 20th at Lorain, Ohio, following an automobile accident. Dr. Twitmeyer was born in 1844 and was graduated from the University of Pennsylvania School of Medicine in 1872. He was surgeon for the Erie and Pittsburgh Railroad for over forty years.

Mrs. Preston Buxton Hill, daughter of Dr. and Mrs. Robert C. Parrish, of Philadelphia, died of pneumonia in Allegany, N. Y., on September 30th. Mrs. Hill was well-known on the musical comedy stage as Miss Eleanor Mabel Garrod. She was stricken by diphtheria the first week of her honeymoon and failed to respond to treatment.

Dr. Oscar Teague, of Pittsburgh, a member of the American Association of Pathologists and Bacteriologists, the New York Pathological Society, and the Society of American Bacteriologists, was killed in an automobile accident, September 29th, near Vineland, N. J. Dr. Teague was born in 1878, and was graduated from the University of Berlin, Germany, in 1903.

Dr. J. L. Christie, aged 72 years, of Conoquenessing borough, for the past 47 years a practicing physician in Butler county, died on October 13th following an illness of several months. Dr. Christie was a graduate of the Miami Medical College, Cincinnati, Ohio, class of 1877, and was the last surviving charter member of the Butler County Medical Society.

Dr. John L. Good, who was graduated from the Medico-Chirurgical College of Philadelphia in 1915, died at his home in Harrisburg on October 2d of chronic interstitial nephritis. He saw service overseas during the World War, was an interne in the Harrisburg Hospital and subsequently was chief of the internes for three years. Following this service he was appointed on the obstetric staff of that Hospital.

Dr. Hugh Hamilton, of Harrisburg, historian and author, died on October 7th following a brief illness. Dr. Hamilton was 78 years old. He was a graduate of the University of Pennsylvania School of Medicine, class of 1871. At one time he was vice-president of this Society and was a frequent contributor to medical journals. He was a former president of the State Federation of Historical Societies and wrote on varied historical subjects.

Births

Dr. and Mrs. Daniel E. Berney, of Scranton, announce the birth of a son.

Dr. and Mrs. W. E. Matthews, of Johnstown, announce the birth of a daughter.

Dr. and Mrs. Arthur Miltenberger, of Johnstown, announce the birth of a son.

Born to Dr. and Mrs. B. H. Brewster, of Tidioute, August 25th, a son, Benjamin Harris, Jr.

Marriages

Miss Claire H. Keane, of Hartford, Conn., became the bride of Dr. John J. Gilbride, of Philadelphia, on September 10th.

Drs. Paul M. Vogt and Le Roy W. Frederick, of Reading, have recently become benedicts and are receiving the congratulation of their friends.

Dr. William D. Stroud, of Philadelphia, and Miss Agnes Hutchinson Shober, of Cold Spring, Rosemont, were united in marriage on September 19th.

Dr. W. E. Grove, of Johnstown, and Miss Lucy Mellinger, laboratory technician at the Memorial Hospital, that city, were married on September 20th.

Dr. Joseph A. Carr of Olyphant was married to Miss Elcanor M. Bonner of Philadelphia on Saturday morning, October 27th, at the Saint Francis De Sales Church, Philadelphia.

Items

Dr. M. T. Leary, of Ridgway, is doing postgraduate work in Chicago.

Dr. Edgar Sturge and son, Philip, of Scranton, have returned from a European tour.

Dr. W. S. Bertolet, of Reading, has been appointed medical director of the Reading Hospital.

Dr. Edward G. Meter, of Reading, attended the convention of the American Rœntgen Ray Society at Chicago.

Dr. W. M. Donovan, of Scranton, has been appointed heart specialist at the U. S. Veterans' Bureau.

Dr. J. Madison Taylor, of Philadelphia, is recovering from an operation at the Lankenau Hospital.

Dr. Lewis H. Taylor, of Wilkes-Barre, was recently appointed a member of the State Health Advisory Board.

Dr. H. H. Penrod, of Johnstown, has gone to Buffalo, N. Y., to take two weeks' postgraduate work in medicine.

Drs. H. J. Rhode and F. G. Runyeon, of Reading, have returned from an interesting trip to Glacier National Park.

Dr. J. R. T. Gray, City Bacteriologist and Pathologist to Crozer Hospital, Chester, sailed for Europe on September 19th.

Dr. H. B. Anderson, pathologist at the Memorial Hospital, Johnstown, has returned from a two weeks' trip to New York and Boston.

Dr. Charles B. Noecker, of Scranton, recently spent two weeks at the Mayo Clinics and one week at the Congress of Surgeons in Chicago.

Drs. W. A. Lebkicher and H. M. Leinbach, of Reading, are visiting the clinics at Buffalo, Toronto, Cleveland, Chicago, and the Mayo Clinic.

Dr. Walter M. Atkinson, of Brockwayville, was operated upon for appendicitis in the Andrew Kaul Memorial Hospital at St. Marys recently.

Dr. G. T. Matlack, of Wilkes-Barre, has resumed his practice after spending some time at Xiasconsett, one of the islands off the coast of Massachusetts.

Deputy health officers have been announced by Dr. Edward W. Bixby, Health Officer for Luzerne County, as follows: Drs. M. J. Van Horn, C. W. Tressler and Peter H. Jamison.

Dr. Louis A. Milkman, of Scranton, is making weekly visits to New York where he is associated with Dr. Myers as instructor in roentgenology at the New York Postgraduate School.

Dr. Elmer L. Meyers, of Wilkes-Barre, was one of the principal speakers at a meeting of the Wyoming County Medical Society recently held in Tunkhannock. His subject was "Heart Lesions in Pregnancy."

During the annual meeting of this Society at Pittsburgh, Dr. John B. Lowman, of Johnstown, Treasurer of the Society, fell and fractured his skull. He is reported as somewhat improved but is still in a very serious condition.

On September 19th a tri-county meeting of physicians was held at Camp "Rest a While" just south of Indiana. Fifty guests were present, including Councilor Quigley, of Clearfield. The speakers on the program were Dr. Walter F. Donaldson, of Pittsburgh, Dr. Samuel J. Waterworth, Clearfield, Dr. Jay B. F. Wyant, Kittanning, Dr. Lawrence Litchfield, Pittsburgh, and W. G. Turnbull of the State Department of Health.

OFFICIAL TRANSACTIONS

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Organized 1848 Incorporated, December 20, 1890

Minutes of the Proceedings of the Medical Society of the State of Pennsylvania

The Seventy-third Annual Session, held at Pittsburgh, October 1, 2, 3 and 4, 1923

MINUTES OF THE HOUSE OF DELEGATES

MONDAY AFTERNOON, OCTOBER 1, 1923—FIRST MEETING OF THE HOUSE OF DELEGATES

The House of Delegates met on the 17th floor of the William Penn Hotel and was called to order at 3 p. m. by the President, Dr. Lawrence Litchfield, Pittsburgh.

The Committee on Credentials made a preliminary report and reported a quorum present.

The President thereupon declared the House of Delegates duly constituted and ready for the transaction of business.

Dr. Fred Fisher, Erie, moved that roll call be dispensed with.

Seconded and carried.

The next order of business being the presentation, correction and adoption of the minutes of the seventy-second annual session, Dr. George A. Knowles, Philadelphia, moved that the minutes be approved as printed in the transactions, and that the reading of them be dispensed with.

Seconded and carried.

THE PRESIDENT: In calling to order the first meeting of the Seventy-third Annual Session of the Medical Society of the State of Pennsylvania, my only observations are those of deep regret, that in the past year we have lost two of our former presidents, Dr. Gable and Dr. Stevens who were always with us and whose steadfast devotion to the welfare of this Society has been remarked by you all. Their lives were long and useful and we will miss them greatly.

The secretary announced the following reference committees that were appointed by the President-elect, Dr. Frontz:

Committee on Credentials—M. Edith MacBride, *Chairman*, Sharon; Marsden D. Campbell, Loganton; Carlisle N. Haines, Sayre.

Reference Committee on Reports of Officers and Standing Committees—J. Newton Hunsberger, *Chairman*, Norristown; Alexander Armstrong, White Haven; Edward J. G. Beardsley, Philadelphia.

Reference Committee on Scientific Business—Charles B. Maits, *Chairman*, Pittsburgh; Frederick A. Fetherolf, Allentown; Michael V. Ball, Warren.

Reference Committee on New Business—Samuel P. Mengel, *Chairman*, Wilkes-Barre; Moses Behrend, Philadelphia; George H. Robinson, Uniontown.

Committee on Place of Meeting—Frank G. Hartman, *Chairman*, Lancaster; Edward E. Mayer, Pittsburgh; Clarence R. Phillips, Harrisburg.

The Secretary presented his report. (See the ATLANTIC MEDICAL JOURNAL, September, 1923, page 859.) He emphasized one subject in his report, namely, Educational Propaganda, stating that since his report was published the State Medical Society of Colorado had increased its per capita assessment, the increase to be expended in educational propaganda. He thought most of the members would agree that we were now without the sympathy of the general public when we attempted to regulate the practice of chiropractors and other cultists. The general public has very little conception of what the profession of medicine has done for economic and social progress in this world, and that we would not occupy the proper place in the public sympathy until these historical facts were brought to public attention. Time alone had demonstrated that nobody else will compare our attainments before the public, and it is up to the medical profession in a dignified manner to keep the daily and weekly press and magazines supplied with well prepared material setting forth the splendid history of the medical profession. He expressed the hope that the House of Delegates would pay particular attention to this part of the Secretary's report.

Dr. Edward B. Heckel, Pittsburgh, moved that the report be referred to the Reference Committee on Reports of Officers and Standing Committees.

Seconded and carried.

The Treasurer's report was presented. (See ATLANTIC MEDICAL JOURNAL, September, 1923, page 862.)

Dr. Fred Fisher, Erie, moved that the Treasurer's report be referred to the Reference Committee on Reports of Officers and Standing Committees.

Seconded and carried.

Dr. Edward B. Heckel, Pittsburgh, moved that the reports of the Chairman of the Board of Trustees and of individual councilors, as printed in THE ATLANTIC MEDICAL JOURNAL, September, 1923, page 865 to 872, be referred to their respective reference committees without being read.

Seconded and carried.

The Secretary read the following communication from the Philadelphia Pediatric Society:

DR. WALTER F. DONALDSON, *Secretary*, May 9, 1923.
Pennsylvania State Medical Society,
Pittsburgh, Pa.

Dear Dr. Donaldson:

At a meeting of the Philadelphia Pediatric Society, held May 8, 1923, the inclosed resolution was made.

We desire to have the Pennsylvania State Medical Society unite with us in making this protest.

We will be much pleased if you will bring this matter to the attention of the Society at an early date.

Very truly yours,
JOHN P. SCOTT, M.D., *Secretary*.

RESOLUTION

WHEREAS, The American Medical Association is publishing a journal for the laity, called *Hygeia*, and

WHEREAS, Said journal contains advertisements of several infant foods, and

WHEREAS, The appearance of said advertisements, in the eyes of the public definitely implies recommendation by the members of The American Medical Association of these infant foods, and

WHEREAS, The recommendations of said foods will tend to undo all the work which thousands of the members of the medical profession have been trying to accomplish in the education of the public to the fact that infants cannot be fed in this indiscriminate manner, and

WHEREAS, The Philadelphia Pediatric Society, since its foundation in 1896, has been endeavoring to foster scientific infant feeding; therefore, be it

Resolved, That The Philadelphia Pediatric Society voices its most earnest protests to the appearance of infant food advertisements in the journal called *Hygeia;* and further, be it

Resolved, That the secretary of said Society be instructed to transmit these resolutions to the President and to the House of Delegates of the American Medical Association, to the President and Secretary of the Pennsylvania State Medical Society and to the Board of Directors of the Philadelphia County Medical Society, and to such other societies as the President and Secretary shall urge to coöperate.

Dr. William H. Mayer, Pittsburgh, moved that the communication be referred to the Reference Committee on New Business with the request that they report at the next meeting of the House of Delegates.

Seconded and carried.

The secretary read the following communication from the Pennsylvania Pharmaceutical Association:

Dr. W. F. Donaldson, *Secretary*, August 28, 1923.
Penna. Medical Society,
Pittsburgh, Pa.

Dear Doctor:

At the annual convention of the Penna. Pharmaceutical Association held in Bedford Springs several weeks ago, a new Committee on Professional and Public Relations was appointed.

It was the sense of our Association that this committee devise ways and means for effecting an *entente cordiale* between the professions of medicine and pharmacy, foster more amicable relations and coöperate in every possible way with the members of the Penna. Medical Society to the end that both professions be enabled to perform their highest services to the public.

It was further proposed that our Association devote one special session to a consideration of such problems as may be of mutual interest to physicians and pharmacists, and I therefore have the pleasure of extending to a committee from your Society a most cordial invitation to confer with us on the occasion of our annual meeting at Hotel Bethlehem, Bethlehem, Pa., June 19 to 21, 1924.

Very respectfully yours,
P. Henry Utech, *President.*

Dr. Fred Fisher, Erie, moved that the communication be referred to the Reference Committee on New Business.

Seconded and carried.

The secretary read a communication from the Philadelphia County Medical Society, dated September 28, 1923, extending an invitation to the Society to hold its annual meeting in Philadelphia in the year in which the Sesquicentennial is to be held.

Dr. Edward B. Heckel, Pittsburgh, moved that the invitation be referred to the Committee on Place of Meeting.

Seconded and carried.

The Secretary read a communication from the Board of Trustees in regard to delegates from the Medical Society of the State of Pennsylvania to the House of Delegates of the American Medical Association.

This communication is as follows:

Inasmuch as the delegation from the Medical Society of the State of Pennsylvania in the House of Delegates of the American Medical Association in recent years has been lacking in the power that should characterize the representation of the second largest constituent society of the Association, the Board of Trustees of the Medical Society of the State of Pennsylvania recommends to the Society the advantage and extreme importance of choosing as delegates only such representative members as are qualified by medical organization experience to serve promptly, efficiently and continuously.

The Board recommends to the Committee on Society Comity and Policy that in their recommendation of nominees to the House of Delegates they should include only such members as are thoroughly qualified and who will serve if elected.

The Board further recommends that delegates chosen by our House of Delegates to represent our Society should within three months of the time of their election meet and elect a chairman and a secretary and formulate policies and recommendations for their guidance in the House of Delegates of the American Medical Association, same to be based on experience and suggestions from the officers, standing committees and boards of the State Society.

The chairman of our delegation should render a report annually to our House of Delegates and the same should be published in our Official Transactions.

To the House of Delegates the Board recommends that our By-Laws governing the choice of delegates and alternates be followed to the letter, (see chapter 4, section 1), also that subsequent to 1923 the railroad and Pullman fare of the delegates from our Society to the American Medical Association be paid by the Society.

The Board of Trustees believes that the adoption of these suggestions will overcome the weakness of our present methods of choosing delegates and assure us of effectiveness in the House of Delegates proportionate to our numerical strength and the potency of other constituent societies in the American Medical Association.

Dr. William H. Mayer, Pittsburgh, moved that it be referred to the Reference Committee on Reports of Officers and Standing Committees.

Seconded and carried.

The secretary read the following from the Board of Trustees with the recommendation that it be adopted by the House of Delegates:

The Board of Trustees recommends to the House of Delegates the passage of a resolution calling attention to the fact that there are certain state laws regulating the practice of medicine in Pennsylvania, the enforcement of which rests with the Board of Medical Education and Licensure, and that these laws are not being enforced by that Board.

In speaking on this resolution President Litchfield said:

It is the unanimous feeling of the Board of Trustees that it is beneath the dignity of the medical profession to go into the courts and try to prosecute and convict illegal practitioners. The State has laws and the machinery for enforcing those laws, and we feel strongly that the medical profession has attempted perhaps too much already in their eagerness to serve the public, and that we have not gained anything commensurate with the effort and have lost prestige in so doing. So I most heartily commend this resolution from the Board of Trustees to the House of Delegates. The Board of Trustees is asking the House of Delegates to pass a resolution calling the attention of the Board of Medical Education and Licensure to the fact that it is their duty to prosecute illegal practitioners, and incidentally calling the attention of the public of Pennsylvania to the fact that the Board of Medical Education and Licensure has not been fulfilling its duty as laid down for them by the laws of the State. We feel that we should put ourselves on record, in the first place, as knowing it is their duty to do it, and, in the second place, as regretting the fact that they have not seen their way to do it. If they have reasons for not doing it, they should be allowed to state those reasons and possibly some remedy will then be suggested. The object of this recommendation from the Board of Trustees simply means that we should come out into the broad daylight and state the fact that it is the duty of the Board of Medical Education and Licensure to prosecute illegal practitioners, and that we think they ought to do it.

Dr. Edward B. Heckel, Pittsburgh, moved that the resolution be referred to the Reference Committee on New Business.

Seconded and carried.

Under new business, Dr. George A. Knowles, Philadelphia, called attention to the sudden death of Dr. E. A. Krusen, Norristown, secretary-treasurer of the Medical Legislative Conference, and suggested the House of Delegates should take some notice of his death.

Dr. J. Norman Henry, Philadelphia, moved that a committee be appointed by the President to draw up suitable resolutions in regard to the death of Dr. Krusen. Seconded.

The Secretary called attention to the following proposed amendment to the Constitution:

"A member of this Society who has been a member for a continuous term of fifteen years, who is not less than sixty-five years of age, may on request of his component county medical society, be made an Affiliate Member provided he holds such membership in his component society as shall relieve him from the payment of dues in his component society. A component society shall not be required to pay any annual assessment for an Affiliate Member. Affiliate Members shall be privileged to participate in the scientific discussion of this Society; they shall not receive the Journal of the Medical Society of the State of Pennsylvania, except by personal subscription; nor shall they be entitled to any benefits from the Medical Defense Fund."

Dr. George A. Knowles, Philadelphia, moved that the amendment be adopted. Seconded.

The amendment was discussed by Dr. Walter S. Brenholtz, Williamsport; Dr. Theodore B. Appel, Lancaster; Dr. Clarence R. Phillips, Harrisburg; Dr. Fred Fisher, Erie; Dr. William H. Mayer, Pittsburgh; Dr. John M. Quigley, Clearfield; Dr. Jay B. F. Wyant, Kittanning; Dr. Edward B. Heckel, Pittsburgh; Dr. J. Norman Henry, Philadelphia, after which Dr. Henry made the following amendment:

Affiliate members shall receive the Journal of the Medical Society of the State of Pennsylvania; they shall be eligible to the benefits of the Benevolence Fund, but they shall not be entitled to Medical Defense. Seconded.

After further discussion by Dr. Cloy G. Brumbaugh, Huntingdon; Dr. Edward B. Heckel, Pittsburgh; Dr. John M. Quigley, Clearfield; Dr. C. Irwin Stiteler, Chester, and Dr. Edward A. Shumway, Philadelphia, and the Secretary, the President put the amendment to a vote and declared it carried.

The original motion as amended was voted on and declared adopted.

Dr. John M. Quigley, Clearfield, presented the following resolution:

That the House of Delegates instruct the Committee on Medical Legislation to prepare and submit to the next session of the legislature a bill which will prevent the dispensing of drinks in anything but paper or other destructible drinking cups.

Dr. Edward B. Heckel, Pittsburgh, moved that the resolution be referred to the Reference Committee on New Business.

Seconded and carried.

The President stated that Dr. Hartman, Chairman of the Committee on Place of Meeting, was absent, and that the President-elect, Dr. Frontz, wished to name Dr. Clarence R. Phillips, Harrisburg, as chairman of that committee, and Dr. Cloy G. Brumbaugh, Huntingdon, to fill a vacancy in the committee.

Dr. William H. Mayer, Pittsburgh, moved that when the House of Delegates adjourned, it adjourn out of respect to the memory of Dr. C. L. Stevens and Dr. I. C. Gable, ex-presidents of the Society, who died during the past year.

Seconded by Dr. Fred Fisher, Erie, and carried unanimously by a rising vote.

Dr. Fred Fisher, Erie, then moved that when the House of Delegates adjourns, it adjourn to meet Wednesday morning, October 3, at 9 a. m.

Seconded and carried.

As there was no further business to come before the House at this time, on motion of Dr. Edward B. Heckel, Pittsburgh, which was duly seconded and carried, the House thereupon adjourned.

Lawrence Litchfield, *President.*
Walter F. Donaldson, *Secretary.*

October 3, 1923—Second Meeting of the House of Delegates

The House of Delegates met in the Crystal Room of the William Penn Hotel and was called to order at 9 a. m. by the President, Dr. Howard C. Frontz, Huntingdon.

The minutes of the previous meeting were read and approved.

Dr. M. Edith MacBride, Chairman of the Committee on Credentials, reported for this committee, stating that 104 delegates had registered.

A quorum being present, roll call was dispensed with.

The president stated that the order of business could be changed by a two-thirds vote of the delegates present, and stated that the next order of business was the election of officers.

Dr. Edward B. Heckel, Pittsburgh, moved that the election of officers be deferred for as long a time as necessary.

Seconded and carried.

The Secretary, under new business, presented the following resolutions in regard to periodic health examinations:

Whereas, The value of periodic physical examinations of apparently healthy individuals is thoroughly recognized by intelligent lay people and physicians alike, and

Whereas, The need for uniformity in the general conduct of such examinations is imperative and apparent; therefore, be it

Resolved, That the House of Delegates of the Medical Society of the State of Pennsylvania recommend the adoption, through its Committee on Public Relations, of a uniform examination blank sufficiently comprehensive to form the basis for intelligent advice, future reference and a fair fee; and be it further

Resolved, That the House of Delegates express its belief that specific recommendation by physician to patient of the necessity for periodic health examinations is entirely ethical and that such recommendation should be made by each physician to his clientele. Be it further

Resolved, That each county medical society shall appoint a sub-committee of the State Society's Public Relations Committee, which sub-committee shall, through county and municipal officials, the press, the pulpit and civic and labor organizations, convince the county citizenship of the need and value of periodic medical examinations and of the health and monetary saving thereby insured, and which shall plan such demonstrations of adequate examinations before the county medical society as shall insure a reasonable degree of uniformity in method and efficiency in results.

Dr. Harry W. Albertson, Scranton, moved that the resolutions be referred to the Reference Committee on New Business.

Seconded by Edward B. Heckel and carried.

The Secretary presented the following resolution in regard to mental defectives:

Whereas, There are at least 30,000 mental defectives in Pennsylvania, many of whom should not have unhampered social freedom; be it

Resolved, That the Medical Society of the State of Pennsylvania, place itself on record as favoring greatly increased appropriations for segregating these defectives and the enactment of a law, or laws, that will permit the sterilization of those in this Commonwealth who are mentally deficient.

Dr. Edward B. Heckel, Pittsburgh, moved that the resolution be referred to the Reference Committee on Scientific Business. Seconded.

Dr. Theodore B. Appel, Lancaster, moved to amend that the question of control of these defectives be referred to the Committee on Public Health Legislation for consideration and, if necessary, for propaganda.

The amendment was seconded, accepted, and the original motion as amended was put to a vote and carried.

The Secretary presented the following resolutions:

Whereas, Those immigrants who are now coming to our shores, many of whom settle in Pennsylvania, are of a lower average mental type than those who formerly came to this country, and by their presence among us are lowering the average mental ability of our population, be it

Resolved, That the Medical Society of the State of Pennsylvania shall express itself as favoring the enactment of an immigration law that will bar out all immigrants who will lower the average mental ability of our country and, further, be it

Resolved, That a communication setting forth the views of the Society on this subject be sent to the United States Senators and Congressmen of this state.

Dr. Edward B. Heckel, Pittsburgh, moved that the resolutions be referred to the Reference Committee on New Business.

Seconded and carried.

The Secretary read the following from the Section on Pediatrics:

The Section on Pediatrics recommends to the House of Delegates that the State Society endorse the administration of iodine or one of its salts, by public health authorities, to girls before the age of puberty, for the prevention of simple goiter.

Dr. Edward B. Heckel, Pittsburgh, moved that this communication be referred to the Reference Committee on Scientific Business.

Seconded and carried.

Dr. J. A. Kolmer, Philadelphia, stated that medical diagnosis in many parts of the state had fallen into the hands largely of nonmedical laboratory technicians. Last spring a group of Pittsburgh pathologists and bacteriologists under the leadership of Dr. Haythorn, proposed an amendment to the Medical Practice Act that was to have been introduced at the last session of the Legislature at Harrisburg, which would enlarge the powers of the Board of Medical Education and Licensure, to investigate laboratories proposing to conduct medical laboratory examinations and to bring the personnel of these laboratories under the authority and examination of the Board of Medical Education and Licensure. A committee of pathologists and bacteriologists appointed by the eastern chapter of the American Society of Bacteriologists request that the Medical Society of the State of Pennsylvania appoint a committee of pathologists and bacteriologists, members of the Medical Society of the State of Pennsylvania, to make a study of conditions, organization and conduct of laboratories in Pennsylvania, making laboratory examinations for aid in medical diagnosis; this committee to make a report of the results of such study before the meeting of the Medical Society of the State of Pennsylvania in 1924.

He said the object in bringing this matter before the House of Delegates was to request that the Medical

Society of the State of Pennsylvania appoint a committee composed of men from Pittsburgh, Philadelphia, Lancaster, Wilkes-Barre, Scranton, and other cities throughout the state, so that an investigation may be made of laboratory conditions in this state, and to propose remedial measures if such should be required.

Dr. Edward B. Heckel, Pittsburgh, moved that this matter be referred to the Reference Committee on New Business.

Seconded and carried.

Dr. Kolmer said it was necessary to have such a committee appointed this year so that it could work in conjunction with the pharmacists and chemists, and report back to the Medical Society of the State of Pennsylvania at its next meeting.

The election of officers being in order, the following officers were nominated and declared duly elected:

President-elect, J. Norman Henry, Philadelphia; first vice-president, Ernest W. Willetts, Pittsburgh; second vice-president, Peter Barkey, Erie; third vice-president, Arthur E. Crow, Uniontown; fourth vice-president, William E. Matthews, Johnstown; secretary, Walter F. Donaldson, Pittsburgh; assistant secretary, Christian B. Longenecker, Philadelphia; treasurer, John B. Lowman, Johnstown; trustees, for the term of five years, Theodore B. Appel, Lancaster, and Donald Guthrie, Sayre.

Delegates to the American Medical Association: C. C. Cracraft, Claysville; J. Newton Hunsberger, Norristown; William H. Mayer, Pittsburgh; John A. Campbell, Williamsport; Edward B. Heckel, Pittsburgh; and G. G. Harman, Huntingdon (to fill the unexpired term of Dr. Stevens, deceased).

Designate Alternates: Thomas R. Currie, Philadelphia; Jay B. F. Wyant, Kittanning; Robert K. Rewalt, Williamsport; Edward A. Shumway, Philadelphia; Francis J. Dever, Bethlehem.

Alternates at Large: Samuel P. Mengel, Wilkes-Barre; C. B. Maits, Pittsburgh; William M. Robertson, Warren; C. G. Brumbaugh, Huntingdon; Charles L. Harsha, Canonsburg.

Dr. Edward B. Heckel, Pittsburgh, was appointed a committee of one to escort the President-elect to the platform.

In introducing Dr. Henry, President Frontz said: I take great pleasure in announcing to you, Dr. Henry, that you have been unanimously elected President of the Medical Society of the State of Pennsylvania. I believe it is the greatest medical society next to the American Medical Association we have, and I think you are certainly very worthy of the honor. I present you to the House of Delegates.

Dr. Henry, in accepting the presidency, said: Mr. President and members of the House of Delegates, I want you to understand that I thoroughly appreciate the honor that has been done me here to-day. I have always been a great booster of medical men. I believe the medical profession as a class are the best citizens in the country. I have said this again and again, and I believe it firmly. I do not except clergymen, lawyers or any other class of professional men. Medical men are always on the right side of things and they are always working for the good of the community in general. Perhaps in a rather joking way it might be said that we represent the only profession whose members are constantly urging regulations to prevent disease thus as it were reducing our opportunities for making a livelihood.

In regard to the work of the Society, I feel enthusiastic about it largely because I know that I can get help. I feel satisfied that no man as president can accomplish anything worth while unless he relies on the men who can help him, such as the Secretary, the members of the Board of Trustees, and the members of the House of Delegates. Without the help of these men one can do nothing, but with their support I feel that he cannot fail.

The President appointed the following committee to draft suitable resolutions on the death of Dr. Krusen: Dr. George A. Knowles, Philadelphia, chairman; Dr. H. C. Kinzer, Lancaster, and Dr. Frank A. Fetherolf, Allentown.

At this juncture the Secretary was called upon to make some remarks. He said: Mr. President and members of the House of Delegates—Year after year you have conferred this honor on me and have called on me for remarks. I have nothing to say except that it gives me great pleasure to do the best I can in the interests of organized medicine not only in the State of Pennsylvania but throughout the nation.

Dr. C. R. Phillips, Harrisburg, chairman, reported for the Committee on Place of Meeting as follows:

Your Committee on Place of Meeting begs to report as follows:

The resolution of the Philadelphia County Medical Society which was read at the meeting of the House of Delegates Monday afternoon, and referred to this committee, is hereby returned to the House of Delegates without action. Our committee favors the acceptance of the invitation, but believes it has no jurisdiction in the matter, inasmuch as it is only a yearly committee.

Two invitations have been extended to the Medical Society of the State of Pennsylvania for its meeting in 1924, one from the Berks County Medical Society to meet in Reading and one from the Dauphin County Medical Society to meet in Harrisburg.

Your committee reports favorably upon the invitation from the Berks County Society because in 1924 they wish us to help them celebrate the 100th anniversary of the founding of their society. Your committee further expresses the pious hope that Dauphin County Medical Society will repeat its invitation for 1925.

In order that the matter may not be overlooked, the Committee on Place of Meeting returns the invitation of the Philadelphia County Medical Society to the House of Delegates for its action. The committee feels that it has no right to accept the very courteous invitation of the Philadelphia County Medical Society for 1926, but that the committee feels the House of Delegates ought to accept it as they have the power to do.

It was moved that the report be adopted.

Seconded and carried.

It was moved that the Secretary be authorized to cast the vote of the House of Delegates for the following nominees of the several county societies of district censors, representing the State Society:

Adams County, T. C. Miller, Abbottstown; Allegheny County, Joseph E. Willetts, Pittsburgh; Armstrong County, Thomas N. McKee, Kittanning; Beaver County, George J. Boyd, Beaver Falls; Bedford County, Walter F. Enfield, Bedford; Berks County, C. W. Bachman, Reading; Blair County, Joseph D. Findley, Altoona; Bradford County, Grant H. Gustin, Sylvania; Bucks County, Alfred E. Fretz, Sellersville; Butler County, Clarence E. Imbrie, Butler; Cambria County, H. F. Tomb, Johnstown; Carbon County, Wilson P. Long, Weatherly; Center County, C. Sumner Musser, Aaronsburg; Chester County, S. Horace Scott, Coatesville; Clarion County, Byron P. Walker, West Monterey; Clearfield County, Ward O. Wilson, Clearfield; Clinton County, Charles L. Fullmer, Renovo; Columbia County, Luther B. Kline, Catawissa; Crawford County, William E. Hyskell, Meadville; Cumberland County, Harry A. Spangler, Carlisle; Dauphin County, Hiram McGowan, Harrisburg; Delaware County, J. Harvey Fronfield, Media; Elk County, John C. McAllister, Ridgway; Erie County, Orel N. Chaffee, Erie; Fayette County, Thomas B. Echard, Connellsville; Franklin County, Ambrose W. Thrush, Chambersburg; Greene County, Harry C. Scott, Waynesburg; Huntingdon County, William Hardin Sears, Huntingdon; Indiana County, William A. Simpson, Indiana; Jefferson County, Spencer M. Free, DuBois; Juniata County, Amos W. Shelley, Port Arthur; Lackawanna County, Frederick J. Bishop, Scranton; Lancaster County, Walter Leaman, Leaman Place; Lawrence County, C. Fenwick

McDowell, New Castle; Lebanon County, William M. Guilford, Lebanon; Lehigh County, George F. Seiberling, Allentown; Luzerne County, Samuel M. Wolfe, Wilkes-Barre; Lycoming County, Edward Lyon, Williamsport; McKean County, Bret H. Hall, Bradford; Mercer County, August M. O'Brien, Sharon; Mifflin County, Frederick A. Rupp, Lewistown; Monroe County, Charles S. Logan, Stroudsburg; Montgomery County, William McKenzie, Conshohocken; Montour County, Reid Nebinger, Danville; Northampton County, W. P. O. Thomason, Easton; Northumberland County, Charles M. Thomas, Sunbury; Perry County, George M. Bogar, Liverpool; Philadelphia County, Edward E. Montgomery, Philadelphia; Potter County, Nathan W. Church, Ulysses; Schuylkill County, James A. Lessig, Schuylkill Haven; Snyder County, Elmer R. Decker, Selinsgrove; Somerset County, George A. Noon, Listie; Sullivan County, Justin L. Christian, Lopez; Susquehanna County, William J. Condon, Susquehanna; Tioga County, Nathan W. Mastin, Wellsboro; Union County, Charles H. Dimm, Mifflinburg; Venango County, Jacob P. Strayer, Oil City; Warren County, Christian J. Frantz, Warren; Washington County, Charles W. Hunter, Charleroi; Wayne County, Fred W. Powell, Honesdale; Westmoreland County, L. B. Raymond Smith, Jeannette; Wyoming County, William W. Lazarus, Tunkhannock; York County, William F. Bacon, York.

Seconded and carried.

Dr. Edward B. Heckel, Pittsburgh, reported for the Committee on Society Comity and Policy, stating that according to Section 8, Article 4, of the Constitution, the Society could elect honorary members who do not possess the degree of M.D., but who are engaged in the work of teaching, and the committee recommends to the House the election to honorary membership of Dr. George H. Meeker, Dean of the Graduate School of the University of Pennsylvania.

Seconded by Dr. J. Norman Henry, Philadelphia, and carried.

Dr. Edward B. Heckel, Pittsburgh, moved that the Secretary be instructed to cast the ballot of the House electing Dr. G. H. Meeker to honorary membership.

Seconded and carried.

The Secretary cast the ballot as instructed and Dr. Meeker was declared duly elected.

Dr. Theodore B. Appel, Lancaster, moved that the invitation from Philadelphia County Medical Society be received and filed for further consideration.

Seconded and carried.

The President called attention to one or two special committees that were not functioning, stating that the Committee on Physical Education had for years reported progress.

It was moved, seconded and carried that this committee be dropped.

The President stated that there was no report this year from the Committee to Investigate Community Needs for Hospitals.

Dr. Henry D. Jump, Philadelphia, moved that this committee be continued.

Seconded and carried.

Under new business Dr. Henry D. Jump, Philadelphia, spoke of the relationship of the medical profession to the undertaker. He said that every practitioner present who had endeavored to get autopsies upon his patients who had died was almost universally met with opposition on the part of undertakers. The progressive undertakers from the larger cities appreciated the value of these autopsies to the medical profession and the public, and were willing to coöperate.

Accordingly, he moved that a committee of three be appointed to confer with such undertakers and undertakers' associations as might be necessary to come to an understanding in this matter, and the committee to report at the next meeting of the House of Delegates.

Seconded.

The motion was discussed by the Secretary; Dr. Theodore B. Appel, Lancaster; Dr. Frank C. Hammond, Philadelphia; Dr. Harry W. Albertson, Scranton, after which the motion was put to a vote and carried.

Dr. Henry D. Jump, Philadelphia, moved that the House of Delegates of the Medical Society of the State of Pennsylvania endorse the movement to hold the Sesquicentennial in Philadelphia in 1926.

Seconded and carried.

Dr. Ira G. Shoemaker, Reading, stated that for many years the Society had not made use of its privilege of sending representatives to the medical societies of the border states, such as New Jersey, Delaware, Maryland, West Virginia, and the District of Columbia. He said the time was opportune for the appointment of delegates to visit these different societies, and moved that the President be given power to appoint delegates to visit these different state societies at their annual meetings, and to include a delegate to be sent from the Medical Society of the State of Pennsylvania to the Pennsylvania Pharmaceutical Association and to the State Dental Society.

Seconded and carried.

Dr. George A. Knowles, Philadelphia, moved that the privileges of the floor be extended to Dr. Ambrose Hunsberger, delegate from the Pennsylvania Pharmaceutical Association.

Seconded and carried.

Dr. Hunsberger expressed his gratification at the action of the House in ordering the appointment of a delegate to attend the meeting of the Pennsylvania Pharmaceutical Association. At the last meeting of the Pennsylvania Pharmaceutical Association he said there was an intensive discussion on the necessity of establishing a liaison between the scientific bodies of Pennsylvania for offensive and defensive purposes. At their forthcoming meeting, to be held in Bethlehem, one day will be set aside for the discussion of topics more or less related to medicine and pharmacy. He feels that if contact could be established between the legislative committee of pharmacists, the legislative committee of the medical profession, and the dental legislative committee, a great deal could be accomplished in the protection of the public health in the State of Pennsylvania.

Dr. J. Norman Henry, Philadelphia, stated that last year there was a report made by a committee of which he was a member, calling attention to objections to certain regulations as well as to certain parts of the law that govern the use of alcohol and narcotics in relation to medical and pharmaceutical practice.

Accordingly, he presented the following resolution:

Resolved, That it is the sense of this meeting of the House of Delegates of the Medical Society of the State of Pennsylvania that no regulations governing medical or pharmaceutical practice shall be made by the Commissioner of Internal Revenue before consultation with the representatives of the organized medical and the pharmaceutical professions. Further, that a copy of this resolution be forwarded to the Secretary of the Treasury and to the Commissioner of Internal Revenue.

Seconded.

Dr. John M. Quigley, Clearfield, moved to amend that this resolution be made applicable to the State of Pennsylvania.

The amendment was seconded, accepted, and the resolution as amended was put to a vote and carried.

Dr. Alexander Armstrong, White Haven, reported for the Reference Committee on Reports of Officers and Standing Committees as follows:

REPORT OF THE REFERENCE COMMITTEE ON REPORTS OF OFFICERS AND STANDING COMMITTEES

The committee begs leave to render the following report:

After noting the excellent and exhaustive report of the Secretary, your committee recommends that it be accepted as printed in the Official Transactions.

But, we beg leave to call attention to the fact that there are still too many physicians throughout the state who are not affiliated with our component societies.

The committee feels that each member of our Society should make an earnest effort to bring the enrollment of eligible physicians up to 100% in his particular county.

We would also like to call especial attention of the House of Delegates to that part of the Secretary's report in which he urges the energetic support of the component societies regarding the passage of a "One Board Bill;" satisfactory modifications of the existing Workmen's Compensation Law; and energetic opposition to proposed laws tending to defeat medical research or the practice of preventive medicine.

We would like to commend and recommend a continuance of the postgraduate medical education as carried on last year in certain of our component societies.

We hope the time will soon come when through the efficient coöperation of the adjoining county societies similar postgraduate courses may be arranged throughout the state. The inspiration of trained, practical and enthusiastic teachers is helpful in the highest degree. We feel, however, very strongly that short postgraduate courses, valuable as they are, can never take the place of that postgraduate study open to every member of this Society, namely; intensive study of our own patients in our daily work.

Our committee feels the necessity of calling especial attention to the self-sacrifice of the officers and trustees of our Society who have given so freely and generously of their time and thought to its affairs. Few of us stop to realize how much the success of the Society depends upon its leaders. We call attention with great satisfaction to the purchase of a permanent home in Harrisburg for headquarters of our Society.

This action was concluded by the combined efforts of the trustees, more especially the Finance Committee.

We also point with pleasure and pride to another evidence of efficiency and farsightedness of our trustees in the combination of the Journal of the Medical Society of Pennsylvania, with the Journal of the Medical Society of Delaware. We feel that this is a step toward a greater and wider field of usefulness for the Journal. The Committee on Publication of the Journal should have the hearty commendation of every member of the Society.

Regarding the reports of the individual councilors, we are impressed with the importance as well as the time-consuming duties entailed. We would respectfully submit that it is asking too much of men already overburdened with Society work to be required also to assume the arduous duties of Councilor.

In this connection, we are constrained to call attention to the unintentional discourtesy of certain secretaries who neglect to answer letters when our councilors are planning their visits to the county societies.

We respectfully urge upon the county societies the importance of a spirit of coöperation regarding the visits of the councilors.

Your committee recommends that the report of our efficient Treasurer be accepted as printed.

Regarding the report of the Committee on Public Relations your committee feels that they have performed a most valuable service to this Society as well as to the communities in conducting a campaign for diphtheria prevention.

Practical preventive medicine is in the province of the general practitioner.

President Litchfield's pointed remarks bring home to each of us the necessity for practical demonstration in our own families and lives of our firm belief in the efficacy of the toxin-antitoxin administration for the prevention of diphtheria, successful vaccination for the prevention of smallpox, the use of antityphoid vaccine for the prevention of typhoid fever, and antitetanic serum for the prevention of tetanus and the administration of iodine for the prevention of simple goitre.

Important as these measures are, the committee feels that the opportunities for practical preventive medicine in other diseases are equally important. The prevention of diabetes, by proper supervision of the obese, prevention of nephritis and cardiac disease by the elimination of focal infections, prevention of tuberculosis by supervision of those individuals known to be exposed to the disease.

There is no movement so fraught with possibilities for good to the public health as the proposed plan for periodic health examinations.

As there is a growing demand among the intelligent citizens for this practical form of health preservation and disease prevention, it behooves every member of our Society to prepare himself conscientiously for efficient and painstaking examinations of the supposedly healthy.

We bespeak the same hearty support of the Committee on Public Relations in their campaign for periodic health examinations as they received in certain progressive counties last year in the diphtheria prevention campaign.

We heartily endorse the report of the Committee on Medical Research and recommend that it be accepted as printed.

We recommend that the report of the Committee on Cancer be accepted as printed and that all members aid this committee in their important statistical study of the cancer situation in our state.

We recommend that the report of the Committee on Medical Benevolence be accepted as printed.

We recommend that the report of the Committee on Archives be accepted as printed and we wish to emphasize the great importance of the collection of historical data regarding our component societies.

It would be difficult to over-emphasize the potential good to future generations of physicians that may result from the self-sacrificing labors of a few devoted members of our profession. Few of our profession are endowed with those literary attainments so essential in compiling data of historical character.

Mention might be made here of Dr. Lewis H. Taylor, of Wilkes-Barre, and Dr. Jacob S. Hackney, of Uniontown, who have already given devoted service in this field in their respective counties. The work already accomplished by the men above mentioned has stimulated work of the same character in the counties of Allegheny, Mercer and Philadelphia. We hope the time may soon come when every component society will have an active committee on archives.

Your Reference Committee feels that President Frontz in his opening address on "Medical Care of the Rural Population" gave us all food for thought. His excellent recommendation that a bureau be established either by this Society or by the State Board of Health, as a clearing house for localities needing physicians and for physicians looking for desirable locations, is an entirely practical one.

We heartily recommend that the Board of Trustees take this matter under advisement.

Your Reference Committee feels that after a careful survey of the reports of our officers and committees this Society is to be congratulated upon the faithful and efficient manner in which its affairs are being conducted.

J. Newton Hunsberger, *Chairman,* Norristown.
Alexander Armstrong, White Haven.
Edward J. G. Beardsley, Philadelphia.

It was moved that the report be adopted with thanks to the members of the committee for their work.

Seconded and carried.

Dr. Charles B. Maits, chairman, reporting for the Reference Committee on Scientific Business, stated that his committee approved the recommendations of the Pediatric Section regarding the administration, by public health authorities, of iodine or one of its salts to girls before the age of puberty, for the prevention of simple goiter, provided the administration be under proper medical supervision.

Dr. Samuel P. Mengel, chairman, Wilkes-Barre, presented the report of the Reference Committee on New Business.

The report was considered section by section.

1. In regard to the resolution presented by the Philadelphia Pediatric Society, the committee recommends to the House of Delegates that this communication be acknowledged and filed.

It was moved that the recommendation be adopted.

Seconded.

After discussion by Dr. William N. Bradley, Philadelphia; Dr. Clarence R. Phillips, Harrisburg; and the Secretary, the recommendation was put to a vote and declared adopted.

2. This communication is from the Pennsylvania Pharmaceutical Association. The committee recommends that three members be appointed by the president of the Medical Society of the State of Pennsylvania to meet the Commission on Professional and Public Relations of the Pennsylvania Pharmaceutical Association at Bethlehem, June 19 to 21, 1924.

The committee recommends that three members be appointed.

Dr. Edward B. Heckel, Pittsburgh, moved that the recommendation be adopted.

Seconded and carried.

3. With reference to the Workmen's Compensation Law, the committee recommends that a commission of five be appointed by the president of the Medical Society of the State of Pennsylvania to make an exhaustive study of the Workmen's Compensation Laws and submit such recommendations for the approval of the Medical Society of the State of Pennsylvania and submission to the Pennsylvania Legislature. These recommendations should be such as will improve the care given the injured employee and should provide for the proper recognition of the attending physician.

It was moved that the recommendations be adopted.

Seconded and carried.

4. In regard to prosecution of illegal practitioners the committee recommends the adoption of the following resolution:

> Whereas, The state laws pertaining to the illegal practice of medicine and the healing art in Pennsylvania are not enforced, and
>
> Whereas, It is neither dignified nor proper for the Medical Society of the State of Pennsylvania to endeavor to enforce said laws; therefore, be it
>
> Resolved, That the House of Delegates recommend and request the Board of Medical Education and Licensure to take the necessary steps for the prosecution of illegal practitioners of the healing art, and that such publicity be given this matter as the officers of the Medical Society of the State of Pennsylvania deem proper.

It was moved that the recommendation be adopted.

Seconded.

Dr. Harry W. Albertson, Scranton, moved to amend the recommendation of the committee to the effect that this communication be sent to the president of the Board of Medical Education and Licensure, signed by the president, secretary and the chairman of the Board of Trustees; and that the president of the Board of Medical Education and Licensure be urged to carry out the recommendations, and that he in turn request the Attorney-General to instruct the district attorneys in the different counties to enforce the regulations.

The amendment was seconded, accepted, and the original motion as amended was voted on and carried.

5. With regard to the communication from the Board of Trustees concerning delegates to the American Medical Association, the committee recommends the adoption thereof, with the exception of the following portion of paragraph five: "That subsequent to 1923 the railroad and Pullman fare of the delegates from our Society to the American Medical Association be paid by the Society."

Dr. Edward B. Heckel, Pittsburgh, moved the adoption of the recommendations.

Seconded and carried.

6. In reference to immigrants settling in Pennsylvania who are of lower average mental type, this resolution does not definitely state the mental status of those to be allowed to enter this country. It appears to the committee as though this question should be carefully studied and analyzed before making any definite recommendation, and we acknowledge that we do not possess sufficient data on the subject to make an intelligent recommendation at this time. We, therefore, would advise referring this resolution to the Committee on Public Health and Legislation for action at the next State meeting.

It was moved and seconded that the recommendation be adopted. Carried.

7. Resolution on the value of periodic physical examination of apparently healthy individuals. We heartily recommend the adoption of this resolution with the exception of establishing a fee. This we do not believe should be fixed by the state organization.

Dr. George A. Knowles, Philadelphia, moved the adoption of the recommendation.

Seconded and carried.

> 8. Whereas, There are at least 30,000 mental defectives in Pennsylvania, many of whom should not have unhampered social freedom, be it
>
> *Resolved,* That the Medical Society of the State of Pennsylvania place itself on record as favoring greatly increased appropriations for segregating these defectives and the enactment of a law, or laws, that will permit the sterilization of those in this Commonwealth who are mentally deficient.

The committee approves the above with the exception of that portion as follows: "and the enactment of a law, or laws, which will permit sterilization of those in this Commonwealth who are mentally deficient."

Dr. George A. Knowles, Philadelphia, moved the adoption of the recommendation. Seconded.

Dr. Theodore B. Appel, Lancaster, moved to amend by adding this clause, "and that this subject be referred to the Committee on Public Relations in connection with their health propaganda of the State."

The amendment was seconded, accepted, and the recommendation as amended was put to a vote and declared adopted.

Dr. H. C. Kinzer, Lancaster, made the following report on the death of Dr. Krusen:

The House of Delegates of the Medical Society of the State of Pennsylvania learning with regret of the sudden death of Dr. Edward A. Krusen, secretary and treasurer of the Medical Legislative Conference of Pennsylvania adopts the following resolutions:

> *Resolved,* That in the death of Dr. Krusen the profession has lost a conscientious worker and an ardent advocate of higher medical education,
>
> *Resolved,* That this resolution be placed upon the minutes of this Society, also printed in The Atlantic Medical Journal and a copy be sent to his family.

(Signed) G. A. Knowles.
H. C. Kinzer.

It was moved and seconded that the report be adopted. Carried.

Dr. Harry W. Albertson, Scranton, chairman of the Finance Committee of the Board of Trustees, made the following recommendation to the House: The Board of Trustees recommends that the per capita assessment for 1923-1924 be $5.00, distributed as follows: That the Medical Defense Fund be reduced from seventy-five cents to twenty-five cents; that the Medical Benevolence Fund be raised from fifteen cents to twenty-five cents, and the remainder be used for the publication of the Journal and such other matters as the Board of Trustees may see fit.

Dr. H. B. Gibby, Wilkes-Barre, moved the adoption of the recommendation of the Board of Trustees.

Seconded and carried.

Dr. Samuel P. Mengel, chairman, Wilkes-Barre, reported for the Reference Committee on New Business regarding the appointment of a committee of bacteriologists and pathologists to make an investigation and inspection of the laboratories of the different hospitals of the state. The committee heartily approves of such a plan and recommends that such a committee be appointed by the president.

Dr. Edward B. Heckel, Pittsburgh, moved the adoption of the recommendation.

Seconded and carried.

Dr. J. Norman Henry, Philadelphia, offered the following resolution:

> *Resolved,* That the Medical Society of the State of Pennsylvania in convention assembled convey to the United States

Internal Revenue Commissioner Blair, its full and sincere appreciation of the courtesies extended to the representatives of this Society at an interview granted for the purpose of discussing prohibition and narcotic regulations, and that we express our further appreciation of the subsequent cancelling of the regulation which required signatures upon the reverse side of any prescription containing narcotic drugs in whatever quantity, and the modification of the regulation which required the diagnosis to be written upon the prescription.

Further, that copies of this resolution be sent to the Comissioner of Internal Revenue and to the Secretary of the Treasury.

Dr. H. B. Gibby, Wilkes-Barre, moved the adoption of the resolution, which was seconded and carried.

Dr. Theodore B. Appel, Lancaster, offered the following resolution:

Be it Resolved, That the hearty thanks of the Medical Society of the State of Pennsylvania be extended to the Allegheny County Medical Society and its committees for the splendid entertainment given this Society at its 73rd Annual Meeting, and also that we recognize the extremely able manner in which the Pittsburgh daily papers have handled the reports of the meeting thus demonstrating their interest in public health and preventive medicine.

It was moved and seconded that the resolution be adopted. Carried.

Dr. William N. Bradley, Philadelphia, presented the following resolution:

Resolved, That the Medical Society of the State of Pennsylvania, now in session, request its Committee on Legislation to prepare a bill for presentation to the next legislature, making the immunization of school children against diphtheria compulsory.

Dr. William H. Mayer, Pittsburgh, moved that the resolution be tabled.

Seconded and carried.

Dr. J. S. Hackney, Uniontown, exhibited a medical history of Fayette County which he had compiled and which is now ready for printing.

Dr. Alexander Armstrong, White Haven, moved that the House of Delegates extend to Dr. Hackney a vote of appreciation and congratulation for the splendid work he had done in this pioneer field.

Seconded and unanimously carried by rising vote.

Dr. George A. Knowles said he would like the Committee on Public Health Legislation instructed to procure the services of a constitutional lawyer to write a one board medical bill, taking in all cults, or any one who practices the healing art and putting them on the same plane of education.

Dr. Edward B. Heckel, Pittsburgh, moved that the committee be authorized to secure the services of a constitutional lawyer to draw up such a bill.

Seconded and carried.

Dr. Fred Fisher, Erie, moved that the House of Delegates adjourn subject to the call of the president.

Seconded and carried.

The House thereupon adjourned.

Howard C. Frontz, *President,*
Walter F. Donaldson, *Secretary.*

Members of the House of Delegates Answering Roll Call

Allegheny County Society—Ernest W. Willetts, Pres., Richard J. Behan, Charles B. Maits, Edward E. Mayer, John M. Thorne, Carey J. Vaux, Joseph E. Willetts, Joseph M. Douthett, Edward B. Heckel, James I. Johnston, George W. McNeil, John W. Worell, William H. Mayer.

Armstrong County Society—William J. Bierer.

Beaver County Society—Jefferson H. Wilson.

Bedford County Society—Maurice V. Brant.

Berks County Society—Frank P. Lytle.

Blair County Society—W. Albert Nason.

Bradford County Society—Carlyle N. Haines.

Bucks County Society—Anthony F. Myers, Secy.; Fred Wagner.

Butler County Society—M. Edward Headland, Butler.

Cambria County Society—James A. Lynch, John W. Barr.

Carbon County Society—Alexander Armstrong.

Center County Society—Oscar W. McEntire, Secy.

Chester County Society—Thomas G. Aiken.

Clarion County Society—Charles C. Ross, Secy.

Clearfield County Society—John C. Sullivan.

Clinton County Society—Marsden D. Campbell.

Columbia County Society—James R. Gemmill.

Crawford County Society—Oliver H. Jackson.

Cumberland County Society—Harry A. Spangler.

Dauphin County Society—Charles M. Rickert, Pres.; Clarence R. Phillips; Edwin A. Nicodemus.

Delaware County Society—C. Irwin Stiteler.

Elk County Society—Joseph E. Madara.

Erie County Society—Fred Fisher.

Fayette County Society—Jacob S. Hackney, Secy., George H. Robinson, Harry J. Bell.

Franklin County Society—John Burns Amberson.

Huntingdon County Society—Cloy G. Brumbaugh.

Jefferson County Society—James C. Borland.

Lackawanna County Society—Charles B. Noecker, Pres., Leonard G. Redding, Daniel E. Berney, Frederick J. Bishop.

Lancaster County Society—Horace C. Kinzer, Pres., J. Paul Roebuck, Jacob E. Hostetter.

Lawrence County Society—Eliah Kaplan, Pres.

Lehigh County Society—Frederick A. Fetherolf, Pres., Frederick R. Bausch, Frank S. Boyer.

Luzerne County Society—Samuel P. Mengel, Herbert B. Gibby, Walter Davis.

Lycoming County Society—J. Louis Mansuy, Pres., John A. Campbell, Joseph W. Albright.

McKean County Society—Francis DeCaria, Secy., William A. Ostrander.

Mercer County Society—M. Edith MacBride.

Mifflin County Society—James A. C. Clarkson, Secy., Henry W. Sweigart.

Montgomery County Society—Edgar S. Buyers, Secy., Winfred J. Wright, Herbert A. Bostock.

Montour County Society—John H. Sandel, Secy., J. Allen Jackson.

Northampton County Society—Victor S. Messinger, Secy., Francis J. Dever.

Northumberland County Society—Horatio W. Gass.

Philadelphia County Society—David Riesman, Pres., Thomas R. Currie, Edward A. Shumway, Frank C. Hammond, Paul B. Cassidy, T. Turner Thomas, Albert Strickler, John W. Croskey, Moses Behrend, William N. Bradley, Seth A. Brumm, Henry D. Jump, Louis Edeiken, Henry G. Munson, J. Norman Henry, George A. Knowles, Edward J. G. Beardsley, John A. Kolmer, George C. Yeager.

Schuylkill County Society—Arthur B. Fleming, Secy., T. Lamar Williams, George R. S. Corson.

Susquehanna County Society—Dever J. Peck, Pres.

Tioga County Society—Charles W. Sheldon.

Venango County Society—Charles Brown.

Warren County Society—Michael V. Ball.

Washington County Society—Alexander N. Booth, Pres., William D. Martin, A. L. Runion.

Wayne County Society—Frank I. Smith.

Westmoreland County Society—Ellsmer L. Piper, Export.

York County Society—James C. May, George E. Holtzapple.

MINUTES OF THE GENERAL MEETING, TUESDAY, OCTOBER 2, 1923

The first General Meeting was held at 10 o'clock, Tuesday morning, October 2, 1923, in the Ball Room of the William Penn Hotel, Pittsburgh, being called to order by the president, Lawrence Litchfield, of Pittsburgh.

The President: The seventy-third annual session of the Medical Society of the State of Pennsylvania will come to order. I will call upon Reverend Robert N. Meade for the invocation.

Rev. Robert N. Meade: Almighty God, Eternal Father, in whom we live and move and have our being, we bless Thy Holy Name for the splendors of the human body, for the advancing knowledge thereof, and for the ever-increasing science of its preservation and health. Increase, we pray Thee, this knowledge, and confirm in us a wholesome respect for this great structure which Thou has put into our keeping. Sanctify us to the great duty of correcting its ills and the evils which through ignorance, or weakness, or misfortune, bring suffering upon mankind. Help us, we pray Thee, in our efforts to restore health. May we seek Thy laws, and finding them and working in accordance therewith we shall bring about blessed results, through Jesus Christ our Lord. Amen.

The President: We have in the Commonwealth of Pennsylvania many men of whom this Society is justly proud. They have attained their eminent position by self-sacrifice, by close application to a definite goal, and by untiring industry. And just as Doctor Spiller understands the nervous system, Doctor Day the labyrinth, Doctor Stengel the blood, Doctor Frazier the brain, Doctor Chevalier Jackson the bronchial tree, so does the mayor of this city understand the anatomy and physiology, the neurology and psychiatry, the therapeutics and surgery of a municipality. Mayor William A. Magee.

Address of Welcome

Hon. William A. Magee, Mayor of the City of Pittsburgh: Mr. Chairman, ladies and gentlemen: I think that sometime I will get Dr. Litchfield to recommend me to my fellow citizens. Of course he is talking to strangers. If he were talking entirely to Pittsburgh men, he would not say the same thing. It is very flattering to be introduced in the terms he has used, and on the other hand, I want to be entirely sincere in saying that I am glad to be in a position where I can be the official representative of the City of Pittsburgh, and of the people in the city, in welcoming to our midst this meeting of the leaders in the great medical profession of the state.

You know there are a great many purposes of government, there are a great many governmental activities. It would take a half hour to merely recite their heads, and of course Dr. Litchfield could take a much longer time to recite the heads of medicine. But there are three primary purposes of goverment—the public health, the public safety, and public morals. The doctor, the policeman, and clergyman are the ones who are concerned in their daily lives, in the practice of their occupations, with these absolutely necessary minimum activities of an organized society. You are one of the three principal branches, therefore, which has to do with the occupational status of the people, and a convention of the persons in your profession is a noteworthy event with us. I hope that during your deliberations you will make some further advances in your own science. I believe in this city, in the administration of city affairs, we have attempted to keep abreast with all recent and progressive steps that the medical profession have been pointing out. I refer, of course, principally, to preventive medicine, because that is the side of your profession in which the public official is most interested. It is in that line that all municipalities rely entirely upon the progress that you are making, because these modern congested centers of population are constantly requiring more and more supervision and regulation with reference to the public health. As fast as you devise new theories for the prevention of disease, the public administrator, if he is wise and forward-looking in the practice of his profession, in the performance of his duties, must fall right behind you. In Pittsburgh, under all recent administrations, I believe we have endeavored to do that; we have kept the faith with you.

There is one subject I would like to mention. The last few months the City of Pittsburgh has taken one more forward step, and I think I should mention this to you and ask you to take it back to your own communities, because I believe the State of Pennsylvania has not been as progressive in this particular as many other states have been, both east and west. I refer to zoning. Under the laws every city has a city planning commission. We have had one in this city for about twelve years, but until the last two or three years Pittsburgh did not make any progress in what is called zoning. Zoning in a few words, consists of a system of regulation by councilmanic organization, under an act of the Assembly, with reference to the height of buildings in certain parts of the city, with reference to the area of buildings, the ratio of building to the land on which the building stands, with reference to the number of persons who may live on the land, the ratio of persons per thousand square feet of land. This, of course, primarily refers to the health of the city. I suppose that about 150 cities in the United States have adopted the zoning plan. The great City of Philadelphia, like Pittsburgh, has made efforts over a period of about three or four years. There was a tremendous effort on here for about three years to accomplish zoning, but by reason of the inertia of the public and the fear of regulation on the part of the vested interests, the City of Pittsburgh had great difficulty in bringing itself to the point of adopting this regulation. It is a very difficult and intricate subject, requiring the utmost study and a great deal of consideration from every point of view—and there are a great many different points of view. The City of Philadelphia, after discussing the subject with its Council, in the newspapers and other places where public discussion goes on, and public education takes place, seems to have abandoned the effort to accomplish it. I must confess that I do not know how much progress has been made in third-class cities, but I fear not very much.

This is a subject which I believe is fruitful of most far reaching consequences, especially in large cities. It is most needed, of course, in the large cities but smaller cities that are ambitious to grow would do well to take advantage of what the larger communities have accepted. But the thing I would like to say to you is that I would urge you all, as good citizens, and as men who have a particular interest in this question, that we call the public health, to go back to your own communities and use your influence there in behalf of this new movement.

I wish to express my great appreciation for having the honor to appear before you in behalf of all the people of Pittsburgh, and I wish to give you a hearty welcome.

President Litchfield: After what I said about Mayor Magee's knowledge of municipality affairs, it is a great satisfaction to me to see that he recognizes the political importance of the doctor in the Commonwealth, and I cannot pass over an opportunity to stress that point, that one of our greatest duties is our duty to the Commonwealth, and that the physicians not only in matters of public health, but in matters of general education, should be leaders and instructors.

As an example of what a physician should be, I will call upon Dr. Ernest W. Willetts, President of the Allegheny County Medical Society, to speak a word of welcome from that Society.

Address of Welcome

Dr. Ernest W. Willetts, President, Allegheny County Medical Society: Mr. President, members of the Medical Society of the State of Pennsylvania, ladies and gentlemen: Representing the Allegheny County Medical Society, I have the honor and pleasure of extending to you greetings and a hearty welcome to our city for your seventy-third annual session, and in doing so, I speak for every one of our 1,232 members. The profession of our county is honored by your presence, and our local committees have made every effort to make your visit most pleasant as well as profitable. I feel that this is not the time nor the place to tell you of the achievements of our county society, of which we are very proud. Many of our members, as you know, have served the state society with distinction. I do, however, want to take this opportunity to say that we are particularly proud of the retiring president, Dr. Lawrence Litchfield. He was chosen from our number, and I know of no one who has served more faithfully and efficiently.

The Scientific Program Committee has prepared a program which we feel will fulfill your greatest expectations, and our Entertainment Committees have also made arrangements to make your stay one that you will remember with pleasure.

Again I welcome you in the name of the members of the Allegheny County Medical Society, and it is our desire that you will feel more than amply repaid for the time you spend with us, and that when you leave it will be with a feeling that you will surely come again.

President Litchfield: The two men who have the greatest amount of work and responsibility in preparing for a meeting of this kind are the Chairman of the Scientific Program Committee and the Chairman of the General Committee of Arrangements. Dr. Thomas G. Simonton has been training for years in this particular position. We hope he will perhaps develop and do better as he grows older, but he has certainly done better this year than he has ever done before. Dr. Simonton.

Dr. Thomas G. Simonton, Chairman of the Committee on Scientific Work: There is very little to be said in regard to the program, as you have copies in your hands. The Scientific Program Committee would like to say this, however, that there are always bound to be disappointments because it is impossible for the committee to accept every paper that is offered. The committee has always tried at their first meeting to get up a skeleton program of subjects that seem to appeal to the greatest number of men. At their May meeting, after these papers have been submitted, they select papers. Very often forty or fifty proffered papers are declined because their subjects do not fit in with the skeleton program. It is a very difficult matter to change the program from year to year and fill it with subjects which will be of interest to all the members. This year we have tried to specialize on the diseases and surgery of the kidney. I think there are nine papers this session on the subject. The subject of anuria has long been neglected by this Society and the committee felt that as the mortality of anuria is seventy-two per cent without operation and forty-six per cent with operation, it was about time the State Society studied the subject to see if we cannot in some way reduce the mortality. The subject will be taken up to-morrow morning at 10:30 and the program has been timed so that the members of the House of Delegates may finish with their work and attend the symposium on anuria, which we hope will evoke much general discussion. We hope that out of this symposium will come some new thoughts and new discoveries in the physiology and pathology of this condition.

There is another thing I wish to speak of if I may have just a moment, and that is in regard to the commercial exhibitors. The subject of the exhibitors was referred to the Committee on Scientific Work to see if it could possibly arrange that in the sections or the general meetings something could be done to create more interest in the exhibits. The exhibitors hope that you will visit their exhibits and register your name and address that they may show to their firms names of visiting doctors they come in contact with.

Dr. Walter F. Donaldson, Secretary of the Medical Society of the State of Pennsylvania: Mr. President: I would like to interrupt the program long enough to discharge a very pleasant duty. The Board of Trustees a number of years ago conceived the idea of presenting each year a small token of esteem to the retiring president. This token is presented in behalf of the entire Society. As Secretary of the Society, I speak particularly of the great sacrifice of time and of personal interests that you have incurred, in the performance of your duties as president of this Society. During my tenure of office we have not had a president who has responded with the willingness that you have manifested in the numerous calls that have been made upon you from every part of the state. I therefore have great pleasure in presenting to you this gavel.

President Litchfield: It was with great trepidation that I accepted the honor of this office; also with great pleasure and great appreciation. It has been a much greater pleasure than I expected, and although it has been time consuming, it has had for me great educational value. I know a great deal more about the medical profession than I did a year ago. I know a great deal more about Pennsylvania politics than I did a year ago. I know a great deal more about legislation and legislators and the rewards they do not get and the bills they do not get through. If the public only knew the many good bills that fail, something would be done about it.

During my year in office the Medical Society of the State of Pennsylvania has lost two of its most useful men—Dr. I. C. Gable and Dr. C. L. Stevens, ex-presidents, men who were always present, men who set us an example by faithfully attending meetings, whether the papers were particularly interesting to them personally or not; men who always took part in the discussion, and who never refused to go on committees because it involved work. Dr. Stevens was for twenty-one years the active secretary of this Society and the manager and editor-in-chief of our Journal, which in that period of time made as rapid strides, if not greater strides, than any state medical journal published in the United States.

I want to take this opportunity to thank the members of the Board of Trustees, the members of the House of Delegates, the chairmen and members of my various committees. All have worked harmoniously for the common good. We have had this year a new committee in operation, the Committee on Public Relations; under Dr. Martin's leadership this committee launched its first great work in an effort to reduce the mortality in Pennsylvania from diphtheria to a point below that of any other state in the Union. You know something about the organization and the campaign. It is still on and will go on. The campaign started by this committee should go on permanently and succeeding members of the medical profession should take up the work until the mortality from diphtheria and other diseases which we attack, is reduced to the absolute minimum. These committees cannot do their work effectually unless they have the support of the profession at large. The possibilities in the control of diphtheria have increased greatly within the past few years. Every child in the Commonwealth should be immune to diphtheria. If they are not naturally immune, they should be immunized.

Several sections of Pennsylvania are in the goiter belt of this country, and simple goiter prepares the ground for toxic goiter, for exophthalmic goiter, and also malignant diseases of the thyroid gland. Simple goiter is particularly prevalent in Pittsburgh, and it has been demonstrated by Dr. Marine, now of New York, but formerly of Cleveland, a man who has devoted his life to the study of goiter—it has been demonstrated by him to the satisfaction of the civilized world, that simple goiter can be prevented by the administration of a small amount of iodine annually to children in the goiter belt. I want to ask the medical profession of Pennsylvania if their children are all vaccinated against smallpox every six or seven years. I want to ask them if their children are all immunized or naturally immune to diphtheria. I want to ask them, if they live in the goiter belt, if their children get iodine every year. If we, as members of the medical profession, do not practice prevention in our own families how can we broach it to the public?

Our standards of medical education have led us into politics more than anything else. We are now attacking the healing cults by insisting on education proportionate to the responsibilities given them. We want a one board bill for all those who practice the healing art in any form. If they wish to be chiropractors or osteopaths, if they wish to belong to any cult whatever that is in existence, all we ask is that their education be commensurate with the responsibility which the Commonwealth confers upon them with their license to practice.

One more point. Who is supposed to enforce the laws of Pennsylvania? The steel manufacturers are not expected to enforce the laws which govern their industry. I know of no trade or profession that is expected to be prosecutors or enforcers of the laws of the state. The medical profession, in their zeal to do their duty to the Commonwealth, have in the past attempted in certain flagrant cases to rid communities of dishonest and disreputable quacks. The medical profession in this state at the present time feels that is not wise. It puts the prosecuted one more or less in the light of a martyr; it puts the medical profession more or less in the light of people who are trying to work for their own gain. The laws of Pennsylvania provide a means of enforcement, and the medical profession should look to the state and not to their own profession for that sort of work.

One more very important step has been made in this state during the past year and, that is by Dr. Meeker, the Dean of the Graduate School of Medicine, University of Pennsylvania.

In going about the state to the various county societies, I have been impressed by the absence of young men at the meetings. The young men seem to be all staying in the large cities and settling about their Alma Mater, as acorns settle about an oak. It is bad for the acorns and is oftentimes bad for the young doctor. It is also very bad for the rural communities to be so greatly in need of physicians when there are plenty of physicians in the United States. Something must be done to make rural practice more attractive to the young men, and the most important thing that can be done in this regard is to carry the university extension idea into medical education and enable a man to settle in a rural district without losing touch with the medical courses and the medical teachers of his state. Dr. G. H. Meeker, in coöperation with some of our component societies, is doing a great work through the instrumentality of the Graduate School of Medicine of the University of Pennsylvania.

It is easy enough to find doctors who can talk indefinitely on medical questions; some of them talk also very fluently and easily on public questions, but when you wish a man in the medical profession to organize entertainment committees, you have to seek for special talent, a talent which is not particularly common in the medical profession. But we, in Allegheny County, have such a man in Dr. Harold A. Miller, chairman of the local Committee on Arrangements, whom I will ask to speak to us now.

Dr. Harold A. Miller, chairman of the Local Committee on Arrangements: Mr. President, fellow-members, ladies and gentlemen: Through the very hearty coöperation of the men who have been on this committee with me, I feel we have a program this year which will be quite satisfactory and entertaining. We think we have very competent committees this year. Doctor I. H. Alexander, chairman of the Committee on Hotels, has the hotel situation very well in hand and knows just how many rooms have been taken and how many are available in the different hotels. To those desiring cards for clubs, he will be pleased to see that they are furnished you. The Committee on Clinics is in the general charge of Dr. E. E. Mayer. As you will see, there is a program of clinics on Monday and Friday, in the various hospitals. The Banting Clinic on diabetes is set for Friday morning, and you will have an opportunity of seeing not only the laboratory work, but the practical clinical application of the latest treatment of diabetes.

The Transportation Committee wishes to announce that upon presentation of a total of two hundred and fifty certificates of purchase from the railroad company, you will be entitled to a reduced fare for your return trip. Those of you who came by automobile, we will be glad to furnish any information needed regarding the best route to any part of the state. No man in Pennsylvania is more familiar with the roads of the state than Dr. Hawkins, chairman of this committee.

We have been very fortunate in having as chairman of the Publicity Committee a member who is known throughout the state, Dr. Edward B. Heckel.

The Smoker Committee is in charge of Dr. Schleiter. We hope you will all attend the smoker.

The Committee on Scientific and Pathological Exhibits, of which Dr. Haythorn is chairman, has prepared an exhibit in the balcony which is well worth the time you may spend in viewing it. You are invited and urged to visit this exhibit. There will be one or two men in charge of it during the entire meeting, who will be very glad to talk to you and answer any questions.

Mrs. Charles Aufhammer is in charge of the Ladies' Committee, and she has prepared a fine program of entertainment for the visiting ladies. The ladies will be motored to the various country clubs surrounding the city and furnished with entertainment in the form of bridge, golf, music, and so forth. On Thursday afternoon the visiting ladies will be the guests of Mrs. Edward B. Heckel at a tea and musicale.

The Committee on Public Meetings is fortunate in having Dr. J. D. Heard as its chairman, a man who was instrumental in bringing Dr. Banting, who will give us both a lecture and a clinic. Dr. Banting's lecture will be preceded by lectures by a number of other men. The tickets for this lecture are available for those who have not already secured them. Prior to this lecture there will be a subscription dinner at the University Club. The tickets for the Banting lecture will be in charge of Dr. Thomas Sheppard, who will furnish them on application. And do not forget that any of you who wish to play golf will be provided with tickets for any of the country clubs, upon application.

President Litchfield: Just as the county societies are component parts of the State Medical Society, so this Society is a component part of the American Medical Association, the greatest medical association in the world without any doubt. We have with us this morning one of the trustees and one of the best speakers in the entire American Medical Association. I have the honor to present to you Dr. Charles W. Richardson, of Washington, D. C., who will speak to us representing the Board of Trustees of the American Medical Association.

(See *this* number—Atlantic Medical Journal.)

President Litchfield: The Chair was impressed particularly by the last two subjects to which Dr. Richardson has referred. We should not only take *Hygeia* and read it, but we should bring up our children and train our wives to read it. I said to you that you should see that your children were vaccinated and made immune to diphtheria, smallpox and goiter. If any of your patients to whom you suggest a periodic health examination ask you, "Do you have a health examination periodically?" what can you truthfully reply to them? I also wish to stress the strength and responsibility of this society by calling your attention to the fact that the Medical Society of the State of Pennsylvania comprises about one-ninth of the total membership of the American Medical Association.

We, at these meetings, are always glad to welcome delegates from sister states. We are also glad to welcome members of the medical profession from every part of the country. We will now hear from Dr. William Blair Stewart, Atlantic City, of the Medical Association of New Jersey, which state we hope soon will join with Pennsylvania and Delaware in the publishing of the Atlantic Medical Journal.

Dr. William Blair Stewart: Mr. President, it is my pleasure to bring to you and the members of the Medical Society of the State of Pennsylvania greetings from the Medical Association of New Jersey. We, in common with you, have been having some trouble with medical legislation. It seems that our legislators are convinced that every time they meet they should upset the medical laws enacted the year before for the protection of the general public and for the benefit of those who are administering to that public. We, in New Jersey, have impressed upon our members that we must arouse ourselves from the lethargy into which we have fallen and be more active in medical and health legislation and get in direct contact with our own legislators and come out *en masse* before the state legislature, to show them that we mean business. When we do that we almost always get what we want. We are with Pennsylvania, and we are endeavoring to uphold the tenets of the medical profession, and also to see to it that those high standards which have been established in our state shall not be torn down by any cult or ism in connection with the healing art.

Speaking of the Journal, as mentioned by your president, there are many in our state medical society who are favorable to the amalgamation of the Journal of the society of New Jersey with that of Pennsylvania and Delaware, but we have a few among the older members of the society who are still holding to the tenets of their fathers and grandfathers. They may see the light, and we hope within the next year or two that there may be an amalgamation in a journal that will not only be as good as the present ATLANTIC JOURNAL, but one that will far surpass any state journal in the United States.

In behalf of the members of our Society, I want to invite you to attend the annual meeting of the New Jersey Medical Society in Atlantic City, in September, 1924. You may have read that Atlantic City is the greatest playground in the world. It is the premier health resort of the United States, and while you may have read that Atlantic City is a wet place, and that it recently presented a pageant which was not proper, I assure you that if you attend our society, neither your morals nor your modesty will be disturbed. We should like to see you at our meeting next year.

PRESIDENT LITCHFIELD: We also have with us this morning from the State of Colorado, a former member of this society, Dr. Edward Jackson.

DR. EDWARD JACKSON, Denver, Colorado: Mr. President and members of the Medical Society of the State of Pennsylvania: I once felt quite at home in this society; that was many years ago. But as I have been sitting here listening to the accounts of the activities that have demanded the attention of your officers during the past year, to the account of the Mayor of this city of the health problems and the other great problems of the municipality, to the welcome you extended to the medical profession at large, in your state and outside of the state, to the greetings that have been brought to you by a familiar voice from New Jersey, I feel very, very much at home again.

This is, as the messenger from the American Medical Association says, a constituent part of the American Medical Association, and as such, a representative of the organized medical profession anywhere in such a gathering should feel at home. I would like to invite those of you who fear you will be crowded out in Atlantic City to turn your faces in the other direction, and I assure you that in Colorado you will find room and a welcome, and that you will experience the feeling that I had this morning, that of being at home with friends.

PRESIDENT LITCHFIELD: We also have with us this morning a delegate from the Pennsylvania Pharmaceutical Association, an association whose ties and obligations are closely knit with those of the medical profession. Dr. Ambrose Hunsberger, Philadelphia.

DR. HUNSBERGER: Mr President, members of the Medical Society of the State of Pennsylvania: It is a pleasure indeed to be accorded the privilege of appearing before this distinguished body as a delegate from a sister association. I have been directed by the officers and members of the association to extend a cordial greeting from our association and to express the hope that your meeting will be one of profit and pleasure from every point of view. We wish to pledge to you our help in your great work of ameliorating the ills of humanity and conserving the human health of this state.

It seems a particularly important moment for us to take up the matter of representation between the two organizations. We recognize that many evils have crept into medical practice as well as into pharmaceutical practice. There has been so much that has interfered with pharmaceutical development from the standpoint of making progress within the last two or three years that our efforts have been directed largely to the defending of ourselves from adverse legislative regulations passed during the last two or three years. These things have their reflex in the practice of medicine. As our medical supplies are restricted, we are placed in the position of not being able to supply the needs of physicians. We want to assure you of our interest in your problems and to beseech your coöperation in ours. I am sure we are both needed in the great problem of health conservation and we are willing to do our part.

PRESIDENT LITCHFIELD: I now come to my last official act, which is the introduction of the new president of this Society, Dr. Frontz. We have stood side by side during the past two years, and although I should like to be the president of this Society forever, I must give up this gavel, and there is no one in the state to whom I surrender it with greater pleasure and with greater confidence that the work in which we have been interested will go forward in the year to come much better than it has in the year just closed.

DR. HOWARD C. FRONTZ: Mr. President, ladies and gentlemen: I desire first to say that Dr. Litchfield, in addition to being a scientific doctor, has proven in the last year that he is also a great executive. He has devotedly spent his time and energy in traveling over the state. He has proven your wisdom when two years ago you chose him as your president. I realize that the pace set by Dr. Litchfield will be difficult to follow in this important office. I have the highest regard for him and he has taught me many a good lesson during the last year.

(President's Address—See October ATLANTIC MEDICAL JOURNAL, page 1.)

L. Wallace Ohl, D.D.S., Pittsburgh, read a paper entitled "The Importance of Foci of Infection in the Mouth from a Dentist's Viewpoint. (By invitation) This paper was discussed by Drs. P. V. McParland, (By invitation) Pittsburgh; C. J. Hollister, (By invitation) Harrisburg; Harry W. Albertson, Scranton; and the discussion closed by Dr. L. Wallace Ohl.

Dr. Mary M. Wolfe, Laurelton, read a paper entitled "The Laurelton State Village and Pennsylvania's Problem of Mental Deficiency." This paper was discussed by Drs. William C. Sandy, Harrisburg; William W. Richardson, Mercer; and the discussion closed by Dr. Mary M. Wolfe.

The session adjourned until Wednesday morning.

LAWRENCE LITCHFIELD, *Chairman,*
WALTER F. DONALDSON, *Secretary.*

WEDNESDAY, OCTOBER 3, 1923

The Wednesday morning session was called to order at 9:15 a. m., by the first vice-president, Martin T. O'Malley, Scranton.

Dr. Edgar J. Stein, Lancaster, read a paper entitled "Ocular Manifestations from a Traumatic Encysted Hemorrhage in the Brain," which was discussed by Dr. Charles W. Burr, Philadelphia; and the discussion closed by Dr. Edgar J. Stein.

Dr. Judson Daland, Philadelphia, read a paper entitled "Diagnosis and Treatment of Chronic or Latent Tonsillar Infection." This paper was discussed by Drs. John A. Lichty, Pittsburgh; William Egbert Robertson, Philadelphia; Myer Solis-Cohen, Philadelphia;

Nelson S. Weinberger, Sayre; Seth A. Brumm, Philadelphia; Samuel Calvin Smith, Philadelphia; and the discussion closed by Dr. Judson Daland.

Dr. John A. Lichty, Pittsburgh, read a paper entitled "The Relation of Cardiovascular Disease to Symptoms in the Abdomen." This paper was discussed by Drs. William W. G. Maclachlan, Pittsburgh; James E. Talley, Philadelphia; and in closing by Dr. John A. Lichty.

Dr. George P. Meyer, Philadelphia, read a paper entitled "House Dust in Asthma." There was no discussion of this paper.

The following papers were read in a symposium on "Anuria":

Floyd E. Keene, Philadelphia, "Postoperative Anuria."

John R. Caulk, St. Louis, Missouri, "Calculous Anuria." (By invitation.)

J. Edwin Sweet, Philadelphia, "Theoretical Discussion of Anuria."

The above papers were discussed by Drs. Alexander Randall, Philadelphia; Theodore Baker, Pittsburgh; Henry D. Jump, Philadelphia; Benjamin A. Thomas, Philadelphia; Max F. Herman, Philadelphia; Judson Daland, Philadelphia; Lawrence Litchfield, Pittsburgh; H. C. Westervelt, Pittsburgh; Thomas G. Simonton, Pittsburgh; Donald Guthrie, Sayre; John W. Boyce, Pittsburgh; and the discussion closed by Drs. Keene, Caulk and Sweet.

The meeting adjourned until Thursday afternoon.

Martin T. O'Malley, *Chairman*,
Christian B. Longenecker, *Assistant Secretary.*

Thursday, October 4, 1923

The Thursday afternoon session was called to order at 2 p. m., by the president, Dr. Howard C. Frontz.

Two state papers were read: (a) "Quarantine Laws," by Dr. J. Moore Campbell, Harrisburg; and (b) "Prevention of Diphtheria," by Dr. J. Bruce McCreary, Harrisburg. There was no discussion of these papers.

Dr. John F. McCullough, Pittsburgh, read a paper entitled "High Voltage X-Ray in Cancer." This paper was discussed by Drs. George W. Grier, Pittsburgh; Forrest L. Schumacher, Pittsburgh; Richard E. Brenneman, Pittsburgh.

Dr. John W. Bransfield, Philadelphia, read a paper entitled "Surgical Reconstruction of the Nose." This paper was discussed by Dr. George M. Dorrance, Philadelphia.

Dr. Chevalier Jackson, Philadelphia, read a paper entitled "Poisoning of Children by Caustic Alkalies Sold in Grocery Stores." This paper was discussed by Drs. Ellen Patterson, Pittsburgh; and F. J. Bishop, Scranton.

Dr. Orlando H. Petty, Philadelphia, read a paper entitled "The Practical Use of Insulin in the Treatment of Diabetes." This paper was discussed by Drs. Howard G. Schleiter, Pittsburgh; Alfred Stengel, Philadelphia; Henry D. Jump, Philadelphia; William E. Robertson, Philadelphia; Henry K. Mohler, Philadelphia; and the discussion closed by Dr. Petty.

The secretary read a communication urging the members to subscribe for the American Medical Association magazine, *Hygeia*.

The General Meeting adjourned sine die.

Howard C. Frontz. *Chairman*,
Christian B. Longenecker, *Assistant Secretary.*

MINUTES OF THE SECTION ON MEDICINE

October 2, 1923

The first session of the Medical Section was called to order in the Hawaiian Room of the William Penn Hotel, Pittsburgh, on Tuesday, October 2, 1923, at 2:10 p. m., by the Chairman, Dr. Adam J. Simpson, Chester.

Dr. Simpson delivered the address of the Chairman.

Dr. Theodore Diller, with the permission of the Chairman, read a letter which he had received from Dr. John Ritenour asking for information concerning the disease which was known in Washington's time as "Bloody Flux." There was no discussion.

Dr. Edward A. Strecker, Philadelphia, read a paper entitled "Points of Contact Between Internal Medicine and Psychiatry." Discussed by Drs. Theodore Diller, Pittsburgh; Earl D. Bond, Philadelphia; A. C. Buckley, Philadelphia; David Riesman, Philadelphia; Edward J. G. Beardsley, Philadelphia, and the discussion closed by Dr. Strecker.

Dr. William W. Richardson, Mercer, read a paper on "The Rôle of Nutrition in the Etiology, Course and Prevention of Mental Disorders." Discussed by Drs. G. J. Wright, Pittsburgh; and Clifford B. Farr, Philadelphia.

Dr. James P. O'Hare, Boston, Mass., (by invitation) presented a paper entitled "Hemorrhagic Nephritis" (Lantern Demonstration). Discussed by Drs. Howard G. Schleiter, Pittsburgh; W. Egbert Robertson, Philadelphia; A. I. Rubenstone, Philadelphia; Joseph E. Willetts, Pittsburgh, and the discussion closed by Dr. O'Hare.

Dr. Roy R. Snowden, Pittsburgh, read a paper entitled "Facts that Govern the Proper Diet in Nephritis." Discussed by Drs. Edward Weiss, Philadelphia; George A. Clark, Scranton; James P. O'Hare, Boston, Mass.

Dr. John A. Kolmer, Philadelphia, read a paper on "Recent Investigations Concerning Specificity and Practical Value of the New Complement Fixation Reaction in Syphilis." Discussed by Dr. Samuel R. Haythorn, Pittsburgh, and Dr. Kolmer in closing.

Dr. Howard H. Permar, Pittsburgh, read a paper entitled "The Interpretation of the Pathogenesis of Lobar Pneumonia in the Light of Experimental Study." Discussed by Drs. Edward Weiss, Philadelphia; and Samuel R. Haythorn, Pittsburgh.

The Section adjourned at 5:10 p. m.

October 3, 1923

The second session of the Medical Section was called to order in the Hawaiian Room of the William Penn Hotel Pittsburgh, on Wednesday, October 3, 1923, at 2:00 p. m., by the Chairman, Dr. Adam J. Simpson, Chester.

Report of the Executive Committee:

Dr. Howard G. Schleiter, Pittsburgh, presented the following recommendations from the Executive Committee:

Chairman, Dr. Charles Falkowsky, Jr., Scranton.
Secretary, Dr. Roy R. Snowden, Pittsburgh.

On motion, duly seconded and carried, this report was accepted and the Chairman cast the unanimous vote of the Section for these gentlemen for officers for the ensuing year.

Dr. J. Quincy Thomas, Conshohocken, read a paper on "Nervous Indigestion; A Résumé of One Hundred Cases." Discussed by Drs. Edward J. G. Beardsley, Philadelphia; Joseph Sailer, Philadelphia, and Dr. Thomas in closing.

Dr. Martin E. Rehfuss, Philadelphia, presented a paper on "The Ambulatory Treatment of Gastric Ulcer." Discussed by Drs. John A. Lichty, Pittsburgh, J. Quincy Thomas, Conshohocken, and Dr. Rehfuss in closing.

Dr. Joseph Sailer, Philadelphia, read a paper on "The Management of Carcinoma of the Stomach." Discussed by Drs. Joseph C. Ohail, Pittsburgh; Martin E. Rehfuss, Philadelphia; Thomas G. Simonton, Pittsburgh; Judson Daland, Philadelphia; Joseph E. Willetts, Pittsburgh; George E. Holtzapple, York, and Dr. Sailer in closing.

Dr. David Reisman, Philadelphia, read a paper entitled "The Evaluation and Treatment of Abnormal Blood Pressure." Discussed by Drs. James E. Talley, Philadelphia; James P. O'Hare, Boston, Mass.; Joseph Sailer, Philadelphia, and Dr. Riesman in closing.

Dr. Robert A. Keilty, Danville, presented a paper on "The Pathology of Diseases of the Pancreas." Discussed by Drs. Henry D. Jump, Philadelphia; David Riesman, Philadelphia, and Dr. Keilty in closing.

Dr. Edward Weiss, Philadelphia, read a paper on "A Consideration of Polycythemia with Report of Cases illustrating Several Varieties." Discussed by Drs. W. W. G. Maclachlan, Pittsburgh; Judson Daland, Philadelphia; A. I. Rubenstone, Philadelphia.

As Dr. James D. Heard was unable to be present, his paper, "Heart Disease and Pregnancy," was omitted.

Adjourned at 5:30 p. m.

OCTOBER 4, 1923

The third session of the Medical Section was called to order in the Hawaiian Room of the William Penn Hotel, Pittsburgh, on Thursday, October 4, 1923, at 9:30 a.m., by the Chairman, Dr. Adam J. Simpson, Chester.

Dr. W. Egbert Robertson, Philadelphia, read a paper entitled "The Importance of an Exact Diagnosis in Acute Articular Rheumatism." Discussed by Drs. Judson Daland, Philadelphia; Lawrence Litchfield, Pittsburgh; Stanley Crawford, Pittsburgh; Edward J. G. Beardsley, Philadelphia; Theodore Diller, Pittsburgh.

Dr. Alfred Stengel, Philadelphia, presented a paper entitled "Diagnosis and Treatment of Pernicious Anemia and Severe Secondary Anemias." Discussed by Drs. Lawrence Litchfield, Pittsburgh; W. Egbert Robertson, Philadelphia; Milton W. Phillips, Chapman Quarries; Judson Daland, Philadephia; A. E. Rubenstone, Philadelphia, and Dr. Stengel in closing.

Dr. Harold W. Jones, Philadelphia, presented a paper on "Blood Transfusion, Its Indications and Technique." Discussed by Drs. Alexander H. Colwell, Pittsburgh; George M. Dorrance, Philadelphia; W. W. G. Maclachlan, Pittsburgh; A. I. Rubenstone, Philadelphia; Robert A. Keilty, Danville, and Dr. Jones in closing.

Dr. Henry K. Mohler, Philadelphia, read a paper entitled "Basal Metabolism. The Value of its Estimation." Discussed by Drs. Roy R. Snowden, Pittsburgh; Alfred Stengel, Philadelphia; W. Egbert Robertson, Philadelphia, and Dr. Mohler in closing.

The Chairman announced that Dr. George Wilson, who was to have presented a paper on "The Treatment of Encephalitis" was unable to be present because of illness but that he had sent his paper, and asked the wish of the section as to whether it should be read.

Dr. Lawrence Litchfield moved that the paper be read by title and submitted to the editor with the request that it be published. Motion seconded and carried.

Dr. George J. Wright, Pittsburgh, presented a paper on "Migraine with Especial Reference to Paralytic Manifestations." Discussed by Dr. Willam H. Mercur, Pittsburgh.

As Dr. Arthur C. Morgan, who was to have presented a paper on "The Management of Convalescence" was unable to be present his paper was omitted.

The Section adjourned at 12:30 p. m. sine die.

MEMBERS REGISTERED IN SECTION OF MEDICINE

Adams County Society—J. L. Sheetz, New Oxford.

Allegheny County Society—W. J. McGeary, Allison Park; W. N. Marshall, W. R. Marshall, W. F. Ross, Aspinwall; W. T. Hall, Bellefonte; F. W. Donley, Blawnox; T. L. Aye, Brackenridge; J. C. Nicholls, Braddock; S. C. McGarvey, Bridgeville; Q. C. Kocher, Cecil; W. P. McCulloch, Cheswick; H. P. Crawford, C. A. Orr, Crafton; F. R. Braden, E. S. Henry, H. B. Speer, Coraopolis; L. Halpert, Duquesne; R. R. Jones, Edgewood; L. C. Fausold, Glenshaw; H. M. Hall, Homestead; W. C. Wallace, Ingram; R. H. McClellan, McKeesport; C. L. McKinnon, G. R. Wycoff, McKees Rocks; A. J. Bearer, H. T. Elliott, A. S. Kaufman, G. T. Lamon, E. N. Piper, New Kensington; F. W. Mathewson, Oakdale; S. H. Adams, A. Aiello, N. Albrecht, I. H. Alexander, L. F. Ankrim, C. S. Apgar, T. S. Arbuthnot, H. P. Ashe, H. L. Baer, M. H. Baker, H. A. Barnhardt, L. G. Beinhauer, A. Bianco, L. C. Bixler, E. L. Blair, M. A. Blumer, F. C. Boucek, C. J. Bowen, J. W. Boyce, W. A. Bradshaw, F. W. Bremer, P. C. Bruce, W. T. Burleigh, R. G. Burns, P. W. Bushong, G. J. Busman, V. B. Callomon, M. C. Cameron, C. L. Campbell, H. E. Clark, N. H. Clark, R. W. Clark, W. A. Clark, T. P. Cochran, M. Cohen, Mortimer Cohen, B. A. Cohoe, A. H. Colwell, A. R. Cratty, J. S. Crawford, A. W. Crozier, Fannie Davis, F. A. Davis, T. Diller, J. O. Donaldson, J. S. Donaldson, J. D. Donovan, B. E. Dornbush, J. M. Douthett, A. D'zmura, A. H. Eggers, J. E. Eisenhart, C. W. Elkin, J. W. Elpinstone, K. A. Emmerling, D. R. Evans, F. A. Evans, W. J. Fetter, H. Finkelpearl, A. Fisher, J. W. Fisher, O. Fouse, J. N. Frederick, R. S. Freed, E. M. Frost, L. C. Fulton, J. C. Gamble, E. R. Gardner, H. B. Gardner, I. K. Gardner, S. George, L. R. Goldsmith, M. F. Goldsmith, M. Goldsmith, E. W. Goldstein, H. R. Goldstein, J. H. Goldstein, R. D. Goodwin, M. A. Gould, T. W. Grayson, J. Grekin, G. W. Grier, H. W. Grimm, C. C. Hartman, S. R. Haythorn, T. R. Helmbold, C. H. Henninger, R. C. Hibbs, A. V. Hicks, F. W. Hoehn, J. H. Hoffmann, R. T. Hood, C. H. Ingram, H. D. Jew, J. I. Johnston, Z. A. Johnston, C. R. Jones, H. L. Jones, D. Katz, F. S. Kellogg, J. S. Kelso, T. R. Kendrick, D. D. Kennedy, C. H. Ketterer, I. K. King, R. H. King, T. T. Kirk, A. Koenig, A. Koenig, Jr., A. H. Kraft, B. Levant, J. A. Lichty, J. G. Lloyd, P. M. Lloyd, A. K. Lyon, E. C. McAdams, J. L. McBride, M. McCahill, S. F. McComb, W. J. McConnell, S. C. McCorkle, J. C. McCormick, W. McCracken, E. B. McCready, R. J. McCready, J. F. McCullough, W. W. McFarland, J. P. McKelvy, M. S. McKennan, A. McKibben, G. W. McNeil, T. M. Mabon, W. W. G. Maclachlan, C. B. Maits, A. S. Mallek, S. J. Marcus, C. H. Marcy, C. S. Marshall, D. B. W. Martin, E. E. Mattox, W. C. Maxwell, E. E. Mayer, W. H. Mayer, W. H. Mercur, G. B. Meyers, F. B. Miller, L. O. Miller, N. C. Miller, A. M. Milligan, S. C. Milligan, A. Mitchell, W. T. Mitchell, A. F. B. Morris, H. W. Morrow, C. W. Morton, J. S. Moyer, F. Narr, E. E. Neely, T. G. Nelan, C. F. Nill, H. G. Noah, N. C. Ochsenhirt, L. D. O'Donnell, J. C. Ohail, C. L. Palmer, E. O. Pearson, H. H. Permar, C. C. Perry, A. Pettit, I. M. Pochapin, H. O. Pollock, T. L. Randolph, D. G. Richey, A. H. Riethmuller, E. C. Ritchey, C. N. Schaefer, E. P. Schatzman, H. G. Schleiter, L. L. Schwartz, J. P. Seedenberg, W. G. Shallcross, W. Shapera, H. A. Shaw, A. W. Sherrill, T. G. Simonton, G. W. Smeltz, H. P. Smith, R. R. Snowden, R. C. M. Stewart, C. J. Stybr, W. A. Terheyden, J. M. Thorne, H. J. Treshler, A. R. Trevaskis, E. J. Truschel, F. B. Utley, T. C. Van Horne, C. J. Vaux, D. W. Vaux, G. H. Vaux, S. L. Victor, R. P. Walker, W. K. Walker, L. Wechsler, J. C. Welch, H. C. Westervelt, I. B. Whitehead, C. C. Wholey, E. W. Willetts, V. A. Williams, J. V. Wilson, J. Wolf, W. A. Woodburn, J. O. Woods, J. W. Worell, G. J. Wright, H. W. Wuerthele, W. A. Wycoff, E. Zugsmith, Pittsburgh; J. W. Hawes, Renton; S. D. Jennings, Sewickley; N. R. Graham, A. G. Taylor, Sharpsburg; H. F. Fischer, Springdale; C. D. Devlin, H. W. Morrow, F. R. Stotler, Swissvale; F. L. Conwell, J. A. Weamer, Tarentum; D. A. Atkinson, A. E. Torrens, West View; R. W. Allison, D. B. Beggs, J. M. Flude, J. D. McClure, W. L. Thunhurst, J. S. Wurtz, Wilkinsburg; S. E. Nowry, Wilmerding; R. L. Hill, Woodville.

Armstrong County Society—W. H. McCafferty, C. M. McLaughlin, Freeport; J. H. Hargreave, Kelly Station; W. J. Bierer, J. M. Cooley, C. H. Furnee, T. N. McKee, F. C. Monks, H. I. Stitt, J. B. F. Wyant, Kittanning; C. C. Parks, Leechburg; S. E. Ambrose, Rural Valley.

Beaver County Society—A. N. Mellott, Ambridge; C. B. Daugherty, Beaver; G. J. Boyd, Beaver Falls; J. H. Boal, Freedom; J. J. Allen, Monaca; M. L.

McCandless, B. B. Snodgrass, Rochester; H. B. Jones, Woodlawn.

Bedford County Society—F. S. Campbell, Hopewell.

Berks County Society—F. P. Lytle, Birdsboro; J. E. Livingood, I. G. Shoemaker, Reading.

Blair County Society—A. S. Kech, Altoona.

Bradford County Society—S. D. Conklin, Sayre.

Bucks County Society—A. F. Myers, Blooming Glen.

Butler County Society—H. P. St. Clair, A. H. Ziegler, Butler; G. M. Beatty, Chicora; A. I. Stewart, Harmony; R. B. Elrick, Petrolia; W. P. Hockenberry, Slippery Rock.

Cambria County Society—R. M. Alexander, Bolivar; W. G. Turnbull, Harrisburg; J. W. Barr, H. M. Stewart, Johnstown; E. Pardoe, South Fork.

Carbon County Society—Alexander Armstrong, White Haven

Center County Society—David Dale, J. L. Seibert, Bellefonte; P. H. Dale, State College.

Chester County Society—T. G. Aiken, Berwyn; S. H. Scott, Coatesville; J. S. Hammers, Mayview; Joseph Scattergood, West Chester.

Clarion County Society—C. C. Ross, Clarion; J. F. Summerville, Monroe; W. C. Keller, A. J. Hepler, C. V. Hepler, H. A. Wick, New Bethlehem; C. W. Hoffman, Rimersburg; J. B. Miller, Sligo.

Clearfield County Society—G. D. Fussell, J. M. Quigley, Clearfield; A. L. Benson, Philipsburg; W. S. Bryan, Ramey.

Clinton County Society—M. D. Campbell, Loganton.

Columbia County Society—J. R. Gemmill, Millville.

Crawford County Society—H. H. Walker, Linesville; O. H. Jackson, E. J. Werle, Meadville; C. M. Hazen, J. C. Wilson, Titusville.

Cumberland County Society—H. C. Lawton, Camp Hill; J. B. McCreary, Harrisburg.

Dauphin County Society—J. L. Lenker, C. R. Phillips, C. M. Rickert, Harrisburg; J. R. Plank, Steelton.

Elk County Society—J. W. Warnick, Johnsonburg; S. G. Logan, Ridgway; J. E. Madara, St. Marys.

Erie County Society—J. Ackerman, R. S. Minerd, W. H. Rouche, A. M. Schrade, G. M. Studebaker, E. G. Weibel, H. M. Wishart, Erie.

Fayette County Society—J. V. McAninch, Alicia; C. B. Johnson, Allison; D. D. Brooks, E. B. Edie, Connellsville; H. J. Bell, Dawson; R. E. Heath, Fairchance; A. L. Eddy, Greensboro; G. O. Evans, J. S. Hackney, C. H. LaClair, C. H. Smith, Uniontown.

Franklin County Society—J. B. Amberson, Waynesboro.

Greene County Society—E. W. Laidley, Carmichaels; T. N. Millikin, G. M. Scott, F. S. Ullom, Waynesburg.

Huntingdon County Society—J. M. Keichline, Huntingdon; W. J. Campbell, Mount Union.

Indiana County Society—C. A. White, Arcadia; G E. Simpson, A. W. Simpson, Indiana.

Jefferson County Society—I. R. Mohney, Brookville; F. A. Lorenzo, J. H. Murray, Punxsutawney.

Lackawanna County Society—J. J. O'Connor, Olyphant; G. A. Clark, C. Falkowsky, L. H. Gibbs, M. T. O'Malley, Scranton.

Lancaster County Society—V. Treichler, Elizabethtown; J. E. Hostetter, Gap; H. C. Kinzer, Lancaster; L. M. Bryson, Paradise; C. E. Helm, Quarryville.

Lawrence County Society—F. D. Campbell, Hillsville; F. W. Guy, E. Kaplan, C. F. McDowell, B. E. Sankey, H. R. Wilson, W. A. Womer, New Castle; E. McLaughry, New Wilmington.

Lehigh County Society—C. C. Rogers, Allentown; C. H. Muschlitz, Slatington.

Lycoming County Society—G. A. Poust, Hughesville; C. G. Renn, Lairdsville; E. Everett, Masten; F. C. Lechner, Montoursville; J. W. Albright, Muncy; I. T. Gilmore, Picture Rocks; J. L. Mansuy, Ralston, F. P. Adams, Watsontown; W. S. Brenholtz, J. A. Campbell, G. R. Drick, W. E. Glosser, Williamsport.

McKean County Society—F. De Caria, Bradford.

Mercer County Society—R. D. Nicholls, Farrell; O. A. Jones, W. W. Richardson, Mercer.

Mifflin County Society—F. H. Smith, Burnham; F. A. Rupp, Lewistown; C. J. Stambaugh, Reedsville.

Montgomery County Society—E. S. Buyers, A. R. Garner, D. Nathan, Norristown; W. J. Wright, Skippack.

Montour County Society—J. A. Jackson, R. A. Keilty, Danville.

Northampton County Society—F. J. Dever, Bethlehem; M. W. Phillips, Chapman Quarries; E. M. Green, V. S. Messinger, Easton.

Northumberland County Society—E. R. Samuel, Mt. Carmel; L. M. Holt, H. T. Simmonds, Shamokin; H. W. Gass, Sunbury.

Philadelphia County Society—E. J. G. Beardsley, A. G. Beckley, A. C. Buckley, Judson Daland, Louis Edeiken, E. H. Funk, S. F. Gilpin, J. N. Henry, H. D. Jump, T. C. Kelly, G. A. Knowles, J. A. Kolmer, E. L. Martin, H. K. Mohler, H. G. Munson, O. H. Petty, A. Randall, M. E. Rehfuss, D. Riesman, W. E. Robertson, A. I. Rubenstone, J. Sailer, S. C. Smith, A. Stengel, E. A. Strecker, J. E. Talley, E. Weiss, G. C. Yeager, Philadelphia.

Schuylkill County Society—A. B. Fleming, Tamaqua.

Snyder County Society—P. E. Whiffen, McClure.

Somerset County Society—C. C. Glass, B. Lichty, Meyersdale; F. B. Shaffer, Somerset; G. C. Berkheimer, Windber.

Susquehanna County Society—D. J. Peck, Susquehanna.

Tioga County Society—C. W. Sheldon, Wellsboro.

Union County Society—Mary M. Wolfe, Laurelton.

Venango County Society—C. S. Bridenbaugh, Emlenton; C. H. Brown, L. E. McBride, Franklin; J. F. Davis, C. Y. Detar, H. H. Lamb, Oil City.

Warren County Society—C. C. Platt, Kinzua; H. W. Mitchell, Warren.

Washington County Society—D. D. Haines, Allenport; A. N. Booth, R. E. Cummings, Bentleyville; H. S. Snodgrass, Buffalo; G. L. McKee, A. O. Hindman, Burgettstown; J. A. Schurgot, W. C. Martin, California; E. L. Hazlett, A. L. Runion, Canonsburg; J. N. Sprowls, Claysville; J. W. Hunter, Charleroi; W. H. Lewis, Donora; R. E. Conner, Hickory; S. N. Dague, Houston; W. H. LaRoss, McDonald; C. F. Linn, Monongahela; W. D. Gemmill, Morganza; L. W. Braden, C. T. Dodd, L. C. Honesty, G. W. Ramsey, L. D. Sargent, J. H. Shannon, T. D. M. Wilson, Washington.

Westmoreland County Society—E. L. Piper, Export; W. M. Bortz, C. F. Pierce, W. J. Walker, Greensburg; J. D. Caldwell, R. P. McClellan, R. E. L. McCormick, Irwin; U. H. Reidt, J. H. Wilson, Jeannette; T. St. Clair, Latrobe; C. D. Ambrose, J. B. Johnson, Ligonier; M. L. Montgomery, Mt. Pleasant; C. B. Rugh, New Alexandria; H. W. Tuttle, New Florence; W. H. Fetter, E. B. Gilbert, L. T. Gilbert, J. P. Strickler, Scottdale; W. A. Copeland, J. M. Patton, R. H. Speer, Vandergrift.

York County Society—J. C. May, S. K. Pfaltzgraff, York.

MINUTES OF THE SECTION ON SURGERY

TUESDAY, OCTOBER 2, 1923

The first session of the Section was called to order in the Ball Room of the William Penn Hotel, Pittsburgh, at 2 p. m., by the Chairman, Dr. William L. Estes, Jr., South Bethlehem.

Dr. Estes then read the "Chairman's Address," which was not discussed.

Dr. John H. Gibbon, Philadelphia, read a paper entitled "Contraindications to Cholecystectomy."

Dr. Ryerson Decker, Pittsburgh, read a paper entitled "Recurrent Cholelithiasis." These two papers were discussed jointly by Drs. Donald Guthrie, Sayre; Thomas S. Cullen, Baltimore (the Secretary, Dr. Harold L. Foss, Danville, in the absence of Dr. Cullen, read Dr. Cullen's remarks); John J. Buchanan, Pittsburgh; Herbert B. Gibby, Wilkes-Barre; James H.

Baldwin, Philadelphia; Drs. Gibbon and Decker closing.

Dr. Albert F. Hardt, Williamsport, read a paper entitled "Treatment of General Peritonitis Following Ruptured Appendix." Discussed by Drs. Walter Shaw, Ridgway; Evan W. Meredith, Pittsburgh; James H. Baldwin, Philadelphia; John J. Buchanan, Pittsburgh; C. E. Thomson, Scranton; Moses Behrend, Philadelphia.

Dr. J. P. Griffith, Pittsburgh, read a paper entitled "Chronic Duodenal Obstruction." Discussed by Drs. John A. Lichty, Pittsburgh; Donald Guthrie, Sayre; Dr. Griffith closing.

Dr. Lever F. Stewart, Clearfield, read a paper entitled "The Practice of Surgery under the Pennsylvania Compensation Laws." Discussed by Drs. Jonathan M. Wainwright, Scranton; John B. Lowman, Johnstown; Dr. Stewart closing.

Adjourned 5:30 p. m.

WEDNESDAY, OCTOBER 3, 1923

The Chairman, Dr. Estes, called the second meeting of the Section to order at 2 p. m.

The Secretary, Dr. Harold L. Foss, Danville, read the report of the Executive Committee, which resulted in the election of Dr. George M. Dorrance, Philadelphia, Chairman, and Dr. James H. Baldwin, Philadelphia, Secretary of the Section on Surgery for the coming year.

SYMPOSIUM ON PELVIC SURGERY

Dr. Thomas S. Cullen, Baltimore, Md., read a paper entitled "Practical Points in Pelvic Surgery."

The Chairman said: Before proceeding, I should like to voice the pleasure of the Section in having Dr. Cullen with us to-day and having heard this most interesting paper.

On motion, duly seconded and carried, this sentiment was recorded.

Dr. Brooke M. Anspach, Philadelphia, read a paper entitled "Preservation of the Ovaries in Pelvic Surgery."

Dr. Raleigh R. Huggins, Pittsburgh, read a paper entitled "A Review of the Present Status of Minor Surgical Procedures in Gynecology."

These three papers were discussed by Drs. Harvey Smith, Harrisburg; Elmer Hess, Erie; John G. Clark, Philadelphia; W. L. Estes, Jr., S. Bethlehem; Dr. Cullen closing.

Dr. Barton C. Hirst, Philadelphia, read a paper entitled "Surgical Treatment of Complete Uterine Prolapse."

Dr. John G. Clark, Philadelphia, read a paper entitled "The Present Status of Treatment of Carcinoma of the Uterus."

Dr. James L. Gilmore, Pittsburgh, read a paper entitled "Focal Infection as a Danger to the Pregnant Woman."

These three papers were discussed by Drs. Floyd E. Keene, Philadelphia; Samuel J. Waterworth, Clearfield; Thomas S. Cullen, Baltimore, Md.; Dr. Clark closing.

Adjourned 5:15 p. m.

THURSDAY, OCTOBER 4, 1923

The Chairman, Dr. Estes, called the third session of the Section to order at 9:05 a. m.

SYMPOSIUM ON SURGERY OF THE KIDNEY AND URETER

Dr. Carlyle Haines, Sayre, read a paper entitled "Treatment of the Small Ureteral Calculus."

Dr. Edward S. Judd, Rochester, Minn., read a paper entitled "Surgery of the Kidney and Ureter."

Dr. Enoch H. Adams, Danville, read a paper entitled "Modern Diagnostic Methods in Renal and Ureteral Surgery."

Dr. P. Brooke Bland, Philadelphia, read a paper entitled "Treatment of Accidental Occlusion of the Ureter."

These four papers were discussed jointly by Drs. B. A. Thomas, Philadelphia; Charles H. Aufhammer, Pittsburgh; John J. Buchanan, Pittsburgh; Leon Herman, Philadelphia; Stephen E. Tracy, Philadelphia; Herbert B. Gibby, Wilkes-Barre; George M. Dorrance, Philadelphia; Alexander Randall, Philadelphia; Drs. Haines, Judd and Bland closing.

The Chairman, Dr. Estes, said: I should like to express to Dr. Judd in behalf of the Section our great pleasure in having him with us to-day and our appreciation of the valuable paper he has given us.

Dr. Hugh E. McGuire, Pittsburgh, read a paper entitled "Review of Five Years of Fracture Work with Special Reference to Open Reduction." Discussed by Drs. T. Turner Thomas, Philadelphia; George M. Dorrance, Philadelphia; John J. Buchanan, Pittsburgh; Gustav F. Berg, Pittsburgh; Dr. McGuire closing.

Dr. George M. Dorrance, Philadelphia, made a motion that the thanks of the Section on Surgery be extended to the Pittsburgh Academy of Medicine and to the Allegheny County Medical Society for their royal entertainment, the good times and excellent arrangements they had made. This motion was put and unanimously carried.

Adjourned 1:15 p. m.

Members Registered Section on Surgery

Allegheny County Society—H. H. Meanor, Coroapolis; S. A. Norris, Homestead; T. S. Armstrong, J. C. Kelly, D. P. McCune, N. M. Woodward, McKeesport; G. S. Bubb, C. G. Eicher, McKees Rocks; P. A. Brown, M. Snyder, New Kensington; J. H. Alexander, B. R. Almquest, G. Alvino, C. O. Anderson, R. L. Anderson, S. Ayres, F. R. Bailey, H. F. Baumann, N. H. Bennett, G. F. Berg, C. F. Bietsch, W. Blick, A. A. Bornscheuer, C. L. Bowman, M. A. Bradford, R. E. Brenneman, A. J. Bruecken, E. P. Buchanan, J. J. Buchanan, A. F. Buka, D. N. Bulford, J. C. Burt. D. W. Cameron, W. H. Cameron, R. J. Campbell, J. H. Carroll, B. Z. Cashman, W. A. Cave, W. A. Caven, S. A. Chalfant, G. Conti, N. P. Davis, G. H. Davison, R. E. Davison, W. A. Dearth, H. R. Decker, H. E. DeWalt, C. C. Dickey, T. L. Disque, J. W. Dixon, H. H. Donaldson, R. M. Entwisle, T. Evans, H. L. Farquhar, E. W. Fiske, J. W. Fredette, O. C. Gaub, J. L. Gilmore, W. H. Glynn, W. G. Goehring, V. J. Grauten, J. P. Griffith, A. S. Haines, S. M. Hankey, W. E. Hart, F. A. Hartung, G. L. Hays, W. B. Hetzel, H. C. Hieber, G. W. Hiett, C. A. Hill, J. Hodgkiss, G. A. Holliday, M. R. Hoon, R. R. Huggins, D. F. Jackson, J. M. Jackson, L. W. Johnson, J. R. Johnston, R. C. Johnston, H. J. Kalet, S. V. King, H. A. Kipp, H. P. Kohberger, D. R. Kunkelman, L. H. Landon, C. M. Lane, W. S. Langfitt, G. Leibold, M. B. Lichtenstein, C. W. Lurting, W. H. McCombs, A. H. McCreery, S. L. McCurdy, R. P. McGee, J. W. Macfarlane, J. S. Mackrell, J. L. Martin, H. N. Mawhinney, C. C. Mechling, E. W. Meredith, H. A. Miller, E. S. Montgomery, V. Mooney, A. I. Murphy, C. K. Murray, W. A. Nealon, I. L. Ohlman, J. E. Purdy, J. Purman, J. J. Rectenwald, J. M. Reed, H. D. Ritchie, W. H. Robinson, K. I. Sanes, J. J. Schill, T. Schubb, J. H. Seipel, W. O. Sherman, N. G. Shillito, P. R. Sieber, H. M. Sigal, D. L. Simon, J. D. Singley, M. A. Slocum, H. M. Snitzer, M. Spiro, C. M. Swindler, L. W. Swope, V. D. Thomas, E. J. Thomas, P. Titus, F. L. Todd, J. O. Wallace. G. C. Weil, E. A. Weiss, J. M. Wilson, J. V. Wilson, C. W. Wirtz, C. C. Yount, C. E. Ziegler, Pittsburgh; M. W. Heilman, Tarentum, W. O. Mackrell, Wilkinsburg.

Armstrong County Society—W. J. Ralston, Freeport; E. H. McClister, Kittanning.

Beaver County Society—B. C. Painter, J. H. Wilson, Beaver; R. M. Patterson, T. P. Simpson, Beaver Falls; A. B. Cloak, Freedom; J. I. Armstrong, Rochester.

Berks County Society—O. E. Fox, Reading.

Blair County Society—J. H. Galbraith, J. D. Findley, J. S. Taylor, S. P. Taylor, Altoona; W. A. Nason, Roaring Springs.

Bradford County Society—D. Guthrie, C. N. Haines, Sayre.

Bucks County Society—J. F. Wagner, Bristol.

Butler County Society—R. W. Walker, Butler.

Cambria County Society—G. R. Anderson, Barnesboro; H. Somerville, Chest Springs; M. A. Barbouhr, R. C. Davis, J. B. Lowman, C. B. Millhoff, A. Miltenberger, W. J. Reddy, J. L. Sagerson, Johnstown.

Clearfield County Society—L. C. Rowles, L. F. Stewart, S. J. Waterworth, W. O. Wilson, J. H. Woolridge, Clearfield; J. C. Sullivan, DuBois; A. C. Lynn, Philipsburg.

Columbia County Society—W. P. Hughes, Bloomsburg.

Crawford County Society—H. C. Winslow, Meadville.

Dauphin County Society—G. L. Laverty, H. F. Smith, Harrisburg.

Elk County Society—W. C. Show, Ridgway.

Erie County Society—E. Hess, L. A. Lasher, G. A. Reed, Erie.

Fayette County Society—W. M. Lilley, Brownsville; V. P. Pisula, Everson; A. E. Crow, R. H. Jeffrey, W. A. McHugh, G. H. Robinson, Uniontown.

Greene County Society—R. E. Brock, J. A. Knox, H. C. Scott, Waynesburg.

Huntingdon County Society—C. G. Brumbaugh, H. C. Frontz, J. M. Johnston, Huntingdon.

Indiana County Society—F. F. Moore, Homer City; E. Onstott, Saltsburg.

Jefferson County Society—S. M. Free, DuBois.

Lackawanna County Society—F. L. Van Sickle, Harrisburg; R. J. Lloyd, Olyphant; H. W. Albertson, C. B. Noecker, C. E. Thomson, J. M. Wainwright, Scranton.

Lancaster County Society—J. P. Kennedy, Columbia; T. B. Appel, C. R. Farmer, C. P. Stahr, Lancaster.

Lawrence County Society—J. Foster, H. C. Harper, New Castle.

Lehigh County Society—F. S. Boyer, F. A. Fetherolf, Allentown.

Luzerne County Society—M. C. Rumbaugh, Kingston; W. Davis, H. B. Gibby, S. P. Mengel, Wilkes-Barre.

Lycoming County Society—L. M. Goodman, W. N. Shuman, Jersey Shore; A. F. Hardt, Williamsport.

Mercer County Society—C. W. McElhaney, Greenville; F. M. Bleakney, Grove City; P. T. Hope, Mercer; C. C. Marshall, Sharon.

Montgomery County Society—J. E. Gotwals, Phœnixville.

Montour County Society—E. H. Adams, H. L. Foss, Danville.

Northampton County Society—W. L. Estes, Jr., D. K. Santee, Bethlehem.

Northumberland County Society—C. H. Weimer, Shamokin.

Philadelphia County Society—B. M. Anspach, J. H. Baldwin, M. Behrend, P. B. Bland, G. M. Boyd, J. W. Bransfield, J. G. Clark, G. M. Dorrance, M. K. Fisher, J H. Gibbon, R. Goldsmith, F. C. Hammond, H. Hanna, L. Herman, F. E. Keene, W. Krusen, C. B. Longenecker, E. Martin, C. B. Reynolds, J. E. Sweet, B. A. Thomas, S. E. Tracy, Philadelphia.

Schuylkill County Society—G. O. O. Santee, Cressona.

Somerset County Society—C. W. Frantz, Confluence.

Susquehanna County Society—H. D. Washburn, Susquehanna.

Venango County Society—J. B. Siggins, F. M. Summerville, Oil City.

Washington County Society—C. L. Harsha, J. C. Kelso, Canonsburg; J. A. Sprowls, Donora; L. W. Hoon, Monongahela; J. H. Corwin, J. F. Donehoo, E. M. Hazlett, J. C. Knox, S. A. Ruben, Washington.

Westmoreland County Society—B. Haughwout, Derry; J. S. Anderson, L. J. C. Bailey, D. R. Murdoch, J. J. Singer, Greensburg; L. M. Sankey, Jeannette; J. D'Alessio, M. E. Griffith, E. B. Sloterbeck, Monessen; G. T. McNish, Mt. Pleasant; A. H. King, West Newton.

MINUTES OF THE SECTION ON EYE, EAR, NOSE AND THROAT DISEASES

TUESDAY, OCTOBER 2, 1923

The first session of the Section on Eye, Ear, Nose and Throat Diseases was held in Rooms B-C of the William Penn Hotel, Pittsburgh, Tuesday afternoon, October 2, being called to order at 2 o'clock by the Chairman, Dr. William Hardin Sears of Huntingdon.

The Chairman read his address, which was not discussed.

Dr. William C. Posey, Philadelphia, read a paper entitled "Concerning Vernal Conjunctivitis—Some Phases Connected with its Duration, Clinical Features, Prognosis and Treatment," which was discussed by Drs. Edward Jackson, Denver, Colorado; Edward A. Shumway, Philadelphia; Henry K. Pancoast, Ardmore; and by Dr. Posey in closing.

Dr. William Zentmayer, Philadelphia, read a paper entitled "Personal Experience in the Management of Heterophoria," which was discussed by Dr. William W. Blair, Pittsburgh; and in closing by Dr. Zentmayer.

Dr. Luther C. Peter, Philadelphia, read a paper entitled "The Surgical Treatment of Concomitant Squint with Special Reference to the Choice of Operation Best Suited to an Individual Case." This paper was discussed by Drs. Burton Chance, Philadelphia; Fred Fisher, Erie; William C. Posey, Philadelphia; William Zentmayer, Philadelphia; and the discussion closed by Dr. Peter.

Dr. Edward Stieren, Pittsburgh, read a paper entitled "The Rôle of Impacted and Unerupted Teeth in Ocular Disorders." This paper was discussed by Drs. George B. Jobson, Franklin; George E. de Schweinitz, Philadelphia; William Zentmayer, Philadelphia; and Edward Jackson, Denver, Colorado.

Dr. Frank C. Parker, Norristown, read a paper entitled "Remarks upon the Removal of the Cataractous Lens by a Vacuum Method; with Presentation of an Instrument for Preventing Vitreous Loss," which was discussed by Drs. Burton Chance, Philadelphia; Fred Fisher, Erie; George E. de Schweinitz, Philadelphia; and in closing by Dr. Parker.

Dr. Leonard G. Redding, Scranton, read a paper entitled "Recurrent Hemorrhage into the Vitreous," which was discussed by Drs. Clarence M. Harris, Johnstown; William C. Posey, Philadelphia; George E. de Schweinitz, Philadelphia.

The Section adjourned until Wednesday afternoon.

WEDNESDAY, OCTOBER 3, 1923

The Wednesday afternoon session was called to order in the Blue Room at 2 o'clock, by the Chairman.

Dr. Michael Ball, Warren, presented a case of quinine poisoning—a patient who had taken 90 grains of quinine, followed by complete loss of vision, but no aural symptoms. The condition has persisted for four or five years. Central vision at this time is 6/5. Dr. Ball also presented fifteen specimens of larvae taken from the ear—larvae sarcophagi.

Dr. G. R. S. Corson, Pottsville, presented two specimens removed from a degenerated eye enucleated eleven days ago—a part of the lens which had undergone calcareous degeneration, and also the posterior inner wall.

The Report of the Executive Committee nominated the following officers, who on motion, duly seconded, were elected. Chairman, Dr. Glendon E. Curry, Pittsburgh; Secretary, Dr. Nelson S. Weinberger, Sayre.

Dr. Edward Jackson, Denver, Colorado, read a paper entitled "The Ophthalmoscope in General Medical Diagnosis," which was not discussed.

The following papers were read in a symposium:

Dr. George E. de Schweinitz, Philadelphia, "Etiology and Diagnosis of Cavernous Sinus Thrombosis."

Dr. S. MacCuen Smith, Philadelphia, "Etiology and Diagnosis of Lateral Sinus Thrombosis."

Dr. Ewing W. Day, Pittsburgh, "Treatment of Cavernous and Lateral Sinus Thrombosis."

This symposium was discussed by Drs. Edward B. Heckel, Pittsburgh; John F. Culp, Harrisburg; J. Homer McCready, Pittsburgh; George B. Jobson, Franklin; Edward Jackson, Denver, Colorado; L. L. Doane, Butler; George F. Gracey, Harrisburg; Edward A. Shumway, Philadelphia; and in closing by Drs. Smith and Day.

The Section adjourned to meet Thursday morning.

THURSDAY, OCTOBER 4, 1923

The Thursday morning session was called to order, in rooms B-C, at 9:10 a. m., by the Chairman.

Drs. William F. Moore and Robert M. Lukens, Philadelphia, presented a paper on "Bronchoscopic Treatment of Pulmonary Suppurations and Bronchial Asthma" (Lantern Demonstration). This paper was discussed by Drs. Frederick J. Bishop, Scranton; Elmer H. Funk, Philadelphia; Edward Jackson, Denver, Colorado.

Dr. William B. Chamberlain, Cleveland, Ohio, read (by invitation) a paper entitled "The Gradenigo Symptom Complex." This paper was discussed by Drs. George M. Coates, Philadelphia; Ewing W. Day, Pittsburgh; George W. Mackenzie, Philadelphia; Robert J. Hunter, Philadelphia; Walter D. Chase, Bethlehem; William H. Sears, Huntingdon; and the discussion closed by Dr. Chamberlain.

Dr. Ellen Patterson, Pittsburgh, read a paper entitled "Foreign Bodies in Respiratory Tract and Esophagus. Clinical Notes of General Interest." This paper was discussed by Drs. Chevalier Jackson, Philadelphia; W. B. Chamberlain, Cleveland, Ohio; and the discussion closed by Dr. Patterson.

Dr. Lewis Fisher, Philadelphia, read a paper entitled "The Present Status of Vestibular Tests from the Standpoint of the Otologist," which was discussed by Drs. Seth A. Brumm, Philadelphia; George W. Mackenzie, Philadelphia; and in closing by Dr. Fisher.

Dr. John B. McMurray, Washington, read a paper entitled "Diagnosis and Treatment of Chronic Maxillary Sinusitis," which was discussed by Drs. John J. Sullivan, Jr., Scranton; Robert F. Ridpath, Philadelphia; W. E. Brown, Pittsburgh; W. B. Chamberlain, Cleveland, Ohio; and the discussion closed by Dr. McMurray.

Dr. George R. S. Corson, Pottsville, read a paper entitled "Diagnosis and Treatment of Vincent's Angina." This paper was discussed by Drs. Matthew S. Ersner, Philadelphia; George M. Coates, Philadelphia; N. A. Fischer, Pittsburgh.

The Section adjourned sine die.

Members Registered in Section on Eye, Ear, Nose and Throat Diseases

Allegheny County Society—A. Hunter, McKeesport; J. G. Alter, T. E. McConnell, New Kensington; W. L. Allison, C. F. Bernatz, W. W. Blair, W. E. Brown, C. I. Buvinger, H. J. Byron, W. E. Carson, J. M. Conway, N. B. Craighead, G. E. Curry, E. W. Day, S. I. Eber, A. B. Ferguson, N. A. Fischer, A. C. Frank, D. W. Frye, J. A. Hagemann, A. R. Hampsey, E. B. Heckel, S. F. Hogsett, A. Jacobowitz, C. J. Jacquish, G. C. Kneedler, S. L. Koch, B. Kuntz, J. G. Linn, T. B. McCollough, J. H. McCready, C. E. McKee, G. J. McKee, J. I. McLallen, A. A. MacLachlan, R. S. Major, S. W. Marick, J. C. Markel, W. Marshall, L. M. Mitchell, E. L. Neff, C. K. Owens, E. J. Patterson, J. Porter, S. H. Ratner, C. L. Reed, F. H. Rimer, C. C. Sandels, A. A. Schlegel, G. H. Shuman, J. R. Simpson, E. H. Sloan, S. S. Smith, C. C. Stanton, E. Stieren, G. W. Stimson, S. A. Sturm, H. H. Sullivan, M. C. Taylor, H. E. Thorpe, G. C. Todd, H. H. Turner, V. E. Van Kirk, E. S. Walls, F. J. Walz, N. J. Weill, H. Weiss, E. A. Weisser, E. E. Wible, J. E. Willetts, A. T. Zeller, Pittsburgh; T. H. Manley, C. S. Orris, Tarentum; E. P. Gray, C. A. Lauffer, Wilkinsburg.

Armstrong County Society—D. I. Giarth, Ford City; H. W. Allison, Kittanning.

Beaver County Society—H. E. Moore, Ambridge; N. R. Crumrine, W. C. Meanor, Beaver; J. F. Gilliland, Beaver Falls.

Blair County Society—S. P. Glover, Altoona.

Bradford County Society—N. P. Weinberger, Sayre.

Butler County Society—L. L. Doane, L. R. Hazlett, Butler.

Cambria County Society—E. F. Arble, Carrolltown; H. M. Griffith, C. M. Harris, Johnstown.

Clarion County Society—C. L. Clover, Knox.

Clearfield County Society—R. L. Williams, Houtzdale.

Crawford County Society—C. Cooper, Titusville.

Cumberland County Society—P. W. Wagoner, Carlisle.

Dauphin County Society—J. F. Culp, G. F. Gracey, Harrisburg; H. W. George, Middletown.

Delaware County Society—G. H. Cross, C. I. Stiteler, Chester.

Elk County Society—J. C. McAllister, Ridgway.

Erie County Society—G. H. Clapp, F. Fisher, Erie.

Fayette County Society—W. J. Bailey, Connellsville; O. R. Altman, J. E. Van Gilder, Uniontown.

Greene County Society—L. S. McNeely, Kirby.

Huntingdon County Society—W. H. Sears, Huntingdon.

Jefferson County Society—C. L. Main, DuBois; R. C. Gourley, Punxsutawney.

Lackawanna County Society—F. J. Bishop, L. G. Redding, J. J. Sullivan, Scranton.

Lancaster County Society—J. P. Roebuck, E. J. Stein, Lancaster.

Lehigh County Society—D. J. Langton, Allentown.

Luzerne County Society—L. H. Taylor, Wilkes-Barre.

Lycoming County Society—J. F. Gordner, Montgomery; W. F. Kunkle, Williamsport.

Mercer County Society—C. H. Bailey, M. E MacBride, Sharon.

Montgomery County Society—F. C. Parker, Norristown.

Montour County Society—J. H. Sandel, Danville.

Philadelphia County Society—S. A. Brumm, W. L. Cariss, B. Chance, G. M. Coates, J. W. Croskey, T. R. Currie, L. Fisher, R. J. Hunter, C. Jackson, R. M. Lukens, G. W. Mackenzie, W. F. Moore, L. C. Peter, W. C. Posey, R. F. Ridpath, G. E. deSchweinitz, E. A. Shumway, W. M. Sweet, M. A. Warlow, W. Zentmayer, Philadelphia.

Schuylkill County Society—G. R. S. Corson, Pottsville; J. J. Dailey, McAdoo; T. L. Williams, Mt. Carmel.

Somerset County Society—J. R. Hemminger, Somerset.

Venango County Society—G. B. Jobson, Franklin; F. E. Magee, Oil City.

Warren County Society—M. V. Ball, R. L. Young, Warren.

Washington County Society—J. W. Ferman, F. C. Stahlman, Charleroi; C. T. Graves, Donora; H. P. Lynch, Monongahela; J. W. McKennan, J. B. McMurray, C. E. Tibbons, Washington.

Westmoreland County Society—H. B. Barclay, Greensburg; B. R. Smith, Jeannette; W. P. Gemmill, Monessen; M. W. Horner, Mt. Pleasant.

York County Society—J. F. Klinedinst, York.

MINUTES OF THE SECTION ON PEDIATRICS

TUESDAY, OCTOBER 2, 1923

The first session was called to order Tuesday, October 2, at 2 p. m., by Dr. J. Claxton Gittings, Philadelphia, Chairman, William Penn Hotel, Pittsburgh, Pa. The afternoon program contained the following papers, which were well discussed, and the total attendance at this meeting was 137.

Address by the Chairman was discussed by Drs. J. L. Foster, Blawnox; William N. Bradley, Philadelphia; Paul Cassidy, Philadelphia; Howard C. Carpenter, Philadelphia, and J. Claxton Gittings, in closing.

Dr. D. Hartin Boyd, Pittsburgh, read a paper entitled "Anemia in Children." Dr. Frank A. Evans, Pittsburgh, opened the discussion, which was continued by Drs. Paul Cassidy, Philadelphia; William N. Bradley, Philadelphia; J. Claxton Gittings, Philadelphia; and D. Hartin Boyd, in closing.

Dr. William G. Turnbull, Harrisburg, read a paper entitled "Practical Heliotherapy." This paper was discussed by Drs. M. Solis-Cohen, Philadelphia; John M. Higgins, Sayre; and William G. Turnbull, in closing.

Dr. Henry K. Pancoast, Philadelphia, read a paper entitled "X-Ray Studies of the Chest in Infants and Children." The discussion was opened by Dr. John E. Livingood, Reading, in the absence of Dr. Willis F. Manges of Philadelphia, and was continued by Drs. M. Solis-Cohen, Philadelphia; William G. Turnbull, Harrisburg; Joseph B. Feeley, McKeesport; J. Claxton Gittings, Philadelphia; and Henry K. Pancoast, in closing.

Dr. Ellen C. Potter, Harrisburg, read a paper entitled "The Interrelationship Between the Health and Social Welfare of Children." Dr. Howard C. Carpenter, Philadelphia, opened the discussion, which was continued by Drs. Howard C. Frontz, Huntingdon; Roy S. Minerd, Erie; Mary A. Naylor, Pittsburgh; and Ellen C. Potter, in closing.

Dr. Adam C. Williamson, Pittsburgh, read a paper entitled "Jaundice of the Newborn." Dr. Henry T. Price, Pittsburgh, opened the discussion, which was continued by Drs. Paul Titus, Pittsburgh; John M. Higgins, Sayre; and Adam C. Williamson, in closing.

Adjourned 5:15 p.m.

WEDNESDAY, OCTOBER 3, 1923

The second session was called to order, Wednesday, October 3, at 2:10 p.m., by Dr. Gittings, Chairman, of Philadelphia.

Dr. Frederick H. Leavitt, Philadelphia, read a paper entitled "Essentials of a Neurologic Examination in Children." Dr. Edward A. Strecker, Philadelphia, read a paper entitled "Essentials of a Psychiatric Examination in Children." The discussion of both papers was opened by Dr. Charles W. Burr, Philadelphia, and continued by Drs. Edward A. Strecker and Frederick H. Leavitt, Philadelphia, in closing.

Dr. Howard C. Carpenter, Philadelphia, read a paper entitled "The Physician's Opportunity in the Prevention of Disease in Childhood." Dr. William N. Bradley, Philadelphia, opened the discussion, which was continued by Drs. Edward A. Strecker, Philadelphia; Frederick H. Leavitt, Philadelphia; J. Claxton Gittings, Philadelphia.

Dr. Alfred F. Hess, New York City, read a paper entitled "The Rôle of Ultraviolet Rays in Ricketts" (Lantern Demonstration), discussion of which was opened by Dr. Henry T. Price, Pittsburgh, and continued by Drs. William N. Bradley, Philadelphia; Howard C. Carpenter, Philadelphia; Robert K. Rewalt, Williamsport; Joseph B. Feeley, McKeesport; Z. R. Scott, Pittsburgh; Eleanor C. Jones, Philadelphia; and Alfred F. Hess, in closing.

Dr. Daniel E. Berney, Scranton, read a paper entitled "Intradermal Vaccination." Dr. Jesse L. Amshell, Pittsburgh, opened the discussion, which was continued by Drs. Martin T. O'Malley, Scranton; Charles E. Thomson, Scranton; Abraham L. Barbrow, Pittsburgh; George A. Clark, Scranton; Thomas H. Weaber, Allentown, and Daniel E. Berney, in closing.

The Executive Committee made the following nominations for officers for the coming year: Chairman, Robert K. Rewalt, Williamsport; Secretary, Horace Jenks, Philadelphia. On motion duly made and seconded, the above named gentlemen were elected officers for the coming year, the Secretary having cast a ballot as provided by the motion.

Dr. Henry C. Flood, Pittsburgh, read a paper entitled "Cystinuria; Report of Case." Dr. Roy R. Snowden, Pittsburgh, opened the discussion. There was no further discussion.

Adjourned 5:10 p.m. Attendance 93.

THURSDAY, OCTOBER 4, 1923

The third session was called to order on Thursday, October 4, at 9:10 a.m., by Chairman Gittings, Philadelphia.

Dr. James I. McLallen, Pittsburgh, read a paper entitled "Acute Otitis Media and Mastoid Involvement." In the absence of Dr. Percival J. Eaton, Pittsburgh, the discussion was opened by Dr. J. Claxton Gittings, Philadelphia, and was continued by Drs. Henry T. Price, Pittsburgh; J. Clinton Atwell, Butler; Mary A. Naylor, Pittsburgh; Royal S. Haynes, New York; and James I. McLallen, in closing.

Dr. Frank C. Knowles, Philadelphia, read a paper entitled "The Common Diseases of the Skin in Childhood" (Lantern Demonstration). Dr. William H. Guy, Pittsburgh, opened the discussion, which was continued by Drs. Stanley Crawford, Pittsburgh; John M. Higgins, Sayre; Frank C. Knowles, in closing.

Dr. Royal S. Haynes, New York City, read a paper entitled "Clinical Aspects of Congenital Syphilis," and Dr. John A. Kolmer, Philadelphia, read a paper entitled "Mechanism of Infection, Immunity and Diagnostic Reactions in Congenital Syphilis." Dr. William H. Guy, Pittsburgh, opened the discussion of both papers. The discussion was continued by the following: Drs. Frank C. Knowles, Philadelphia; Theodore J. Elterich, Pittsburgh; Stanley Crawford, Pittsburgh; Royal S. Haynes, in closing.

A paper entitled "Tonsillectomies from the Standpoint of the Pediatrician" was presented by Drs. J. Claxton Gittings and A. Graeme Mitchell, Philadelphia. The paper was discussed by Drs. M. Solis-Cohen, Philadelphia; Clifford B. Farr, Philadelphia; William N. Bradley, Philadelphia; Robert K. Rewalt, Williamsport; Joseph B. Feeley, McKeesport; J. Claxton Gittings and A. Graeme Mitchell, in closing.

Adjourned 12:10 p.m. Attendance 109.

Members Registered in Section on Pediatrics

Allegheny County Society—J. L. Foster, Blawnox; J. B. Feeley, McKeesport; J. M. Barr, H. J. Benz, D. H. Boyd, H. B. Burns, C. L. Curll, A. A. Dranga, T. J. Elterich, J. K. Everhart, H. M. Fink, H. C. Flood, W. H. Guy, L. H. Hector, L. Hollander, J. D. Iams, S. I. Lebeau, W. P. McCorkle, J. Z. Mase, M. A. Naylor, H. T. Price, J. A. Rodgers, G. S. Schoyer, Z. R. Scott, C. K. Wagener, H. G. Wertheimer, J. A. Williams, V. J. Yorty, Pittsburgh; W. M. Findley, Wilkinsburg.

Beaver County Society—J. D. Stevenson, Beaver.

Bradford County Society—J. M. Higgins, Sayre.

Butler County Society—J. C. Atwell, M. B. St. Clair, Butler.

Cambria County Society—A. M. Bergstein, Gallitizin; H. J. Cartin, Johnstown.

Erie County Society—J. F. Rutherford, Hastings.

Fayette County Society—H. E. Hall, Uniontown.

Lackawanna County Society—D. E. Berney, Scranton.

Lancaster County Society—W. J. Leaman, Leaman Place.

Lehigh County Society—T. H. Weaber, Allentown.

Lycoming County Society—T. C. Hogue, J. B. Nutt, R. K. Rewalt, Williamsport.

Montgomery County Society—H. A. Bostock, Norristown.

Northampton County Society—W. D. Chase, Bethlehem.

Philadelphia County Society—E. D. Bond, W. N. Bradley, C. W. Burr, H. C. Carpenter, P. B. Cassidy,

C. B. Farr, J. C. Gittings, H. Golden, E. C. Jones, F. N. Leavitt, A. G. Mitchell, H. K. Pancoast, E. C. Potter, M. Solis-Cohen, Philadelphia.

Washington County Society—C. C. Cracraft, Claysville; E. McKay, Charleroi; R. A. Knox, F. I. Patterson, Washington.

Members Registered; Section not Designated

Allegheny County Society—J. Zeok, Braddock; H. H. Rittenhouse, Bridgeville; L. V. L. Brown, Castle Shannon; A. W. Colcord, Clairton; W. J. Connelly, Carnegie; W. S. Ramsey, Coraopolis; C. W. Cohen, Duquesne; E. L. Erhard, Glassport; W. W. Sturgis, Glenshaw; J. T. Allison, Harmarville; A. A. Guffey, W. L. Henderson, A. G. Sandblad, A. R. Snedden, McKeesport; E. V. McCormick, Munhall; J. A. Huth, Natrona; C. S. Hunter, N. Bessemer; C. B. Denny, Oakdale; J. C. Anderson, W. Anderson, C. A. Arnold, W. A. Arnold, R. J. Askin, C. H. Aufhammer, J. A. Baird, A. P. Baker, T. Baker, J. H. Barach, A. L. Barbrow, W. M. Beach, R. J. Behan, L. C. Botkin, A. J. Boucek, C. F. Boucek, T. B. Carroll, E. T. Chatham, S. R. Cohen, G. Conti, S. Crawford, O. T. Cruikshank, A. O. Davis, L. E. Davis, B. M. Dickinson, W. F. Donaldson, C. A. Duffy, O. M. Eakins, O. N. Eisaman, C. J. Ellis, W. G. Eyman, J. C. Fleming, E. N. Foster, E. B. Friedberg, B. Fulton, S. Goldstein, B. Greenberger, J. P. Hall, W. B. Harvey, C. A. Hauck, J. A. Hawkins, E. B. Haworth, T. L. Hazlett, J. P. Hegarty, R. S. Hensell, M. A. Hershenson, H. J. Hopkins, J. J. Horwitz, J. W. Ildza, F. M. Jacob, M. Jena, S. H. Johnson, A. F. Kamens, N. P. Keller, F. Kenworthy, J. P. Kerr, R. A. King, J. P. Kirch, R. W. Lang, L. Litchfield, D. B. Ludwig, F. E. Luke, G. M. McCain, H. S. McClymonds, T. W. McConnell, W. J. McGregor, H. E. McGuire, W. B. McKenna, T. M. T. McKennan, S. H. McKibben, J. P. McMullen, C. P. MacDonald, H. O. Mateer, I. J. Moyer, J. A. Munster, F. Neely, C. T. Osterloh, H. W. Oyer, R. H. Pearlman, D. M. Perkins, J. S. Plumer, O. I. Polk, G. W. Rall, W. B. Ray, M. S. Redmond, N. J. Resmer, J. L. Robertson, N. L. Rosenberg, W. K. T. Sahm, F. M. Schrack, F. J. Schumacher, T. T. Sheppard, G. A. Speer, A. M. Stanton, J. N. Stanton, J. G. Steedle, W. J. Sterrett, M. E. Stover, C. M. Straessley, F. X. Straessley, E. E. Taylor, L. L. Thompson, W. H. Thompson, E. Vandergrift, J. H. Wagner, A. W. Wallis, C. M. Watson, H. E. Waxman, B. B. Wechsler, M. H. Weinberg, H. L. Wignall, J. C. Wiley, E. W. Zurhorst, Pittsburgh; M. R. Feltwell, Sewickley; G. E. Cramer, Sharpsburg; W. T. Pyle, L. N. Smith, Swissvale; W. R. Deemar, C. L. Leydic, G. F. MacDonald, J. C. Smith, Tarentum; A. C. Trevaskis, Turtle Creek; E. D. Boaz, Universal; A. M. Pierce. W. Elizabeth; E. H. Balph, H. Bartle, J: W. E. Ellenberger, Wilkinsburg.

Armstrong County Society—W. H. Nix, Cadogan; E. C. Winters, Ford City; C. A. Rogers, Freeport; A. Sedwick, Kittanning; J. Ward, Yatesboro.

Beaver County Society—E. J. Aten, C. B. Forcey, H. S. Kerchner, Ambridge; M. I. Cornelius, J. J. Scroggs, U. S. Strouss, Beaver; G. F. Boal, Freedom.

Bedford County Society—M. V. Brant, Cairnbrook.

Butler County Society—F. E. DeLong, Boyers; J. M. Dunkle, M. E. Headland, W. A. McCall, J. D. Purvis, H. M. Wilson, Butler; J. S. Campbell, Portersville.

Cambria County Society—J. A. Lynch, Cresson; F. U. Ferguson, Gallitzin; S. P. Boyer, L. M. Gurley, Johnstown; W. A. Blair, Spangler.

Chester County Society—M. Margolies, Coatesville.

Clarion County Society—D. L. McAninch, Lamartine.

Clearfield County Society—B. G. Learn, Ansonville; S. J. Miller, Madera.

Clinton County Society—D. W. Thomas, Lock Haven.

Dauphin County Society—C. C. Cocklin, H. F. Gross, E. A. Nicodemus, Harrisburg.

Delaware County Society—A. J. Simpson, Chester.

Elk County Society—H. H. Smith, Johnsonburg; B. A. Beale, Pittsburgh.

Erie County Society—J. E. O'Brien, Erie.

Fayette County Society—J. W. Gordon, Belle Vernon; L. M. Burchinal, Point Marion; C. D. Bierer, D. E. Lowe, H. E. Ralston, Uniontown.

Huntingdon County Society—G. G. Harman, Huntingdon.

Indiana County Society—M. A. Sutton, Avonmore; A. T. Rutledge, Blairsville; H. B. Buterbaugh, J. W. Carson, W. E. Dodson, Indiana; W. Johns, Wilkinsburg.

Jefferson County Society—W. C. Newcome, Big Run; J. C. Borland, Falls Creek; J. A. Newcome, Vandergrift.

Lackawanna County Society—F. P. Hollister, Scranton.

Lawrence County Society—J. M. Blackwood, W. L. Campbell, J. C. B. Douthett, New Castle; K. M. Cook, New Wilmington.

Lebanon County Society—E. H. Gingrich, Lebanon.

McKean County Society—W. A. Ostrander, Smethport; A. A. Van Slyke, Mt. Jewett.

Mercer County Society—J. S. Knapp, Greenville; J. C. Bachop, Sheakleyville.

Mifflin County Society—J. P. Getter, Belleville; J. A. C. Clarkson, H. W. Sweigart, Lewistown.

Montgomery County Society—J. Q. Thomas, Conshohocken.

Philadelphia County Society—M. S. Ersner, F. C. Knowles, J. K. Marks, S. M. Smith, T. T. Thomas, Philadelphia.

Tioga County Society—L. G. Cole, Blossburg.

Venango County Society—P. L. Bruner, M. A. McKee, P. J. McLain, J. R. Sharp, Oil City.

Washington County Society—R. A. Spahr, Brownsville; A. V. Donaldson, Canonsburg; H. J. Repman, Charleroi; T. L. McCullough, Midway; A. E. Thompson, Washington.

Wayne County Society—F. I. Smith, Shoshola.

Westmoreland County Society—N. Abbaricchio, Bradenville; C. C. Crouse, Greensburg; C. E. Taylor, W. H. Taylor, Irwin; P. S. Pile, Latrobe; E. B. Dunlap, Ligonier; H. W. Day, D. C. Farquhar, W. F. H. Koegel, O. J. Kreger, Monessen; A. M. Cochran, Salina; J. A. Boale, Vandergrift.

York County Society—G. E. Holtzapple, York; J. A. Melsheimer, Hanover.

GUESTS

Charles W. Richardson, Washington, D. C.; Ambrose Hunsberger, Philadelphia; Royal S. Haines, New York City, N. Y.; J. Bennett Morrison, Newark, N. J.; C. J. Hollister, Harrisburg; James P. O'Hare, Boston, Mass.; George P. Meyer, Camden, N. J.; L. Wallace Ohl, D.D.S., Pittsburgh; John R. Caulk, St. Louis, Mo.; Robert L. Pittfield, Philadelphia; Thomas S. Cullen, Baltimore, Md.; Edward S. Judd, Rochester, Minn.; W. B. Chamberlain, Cleveland, Ohio; Alfred H. Hess, New York City, N. Y.; J. Paul Harvey, Colin R. Clark, Youngstown, Ohio; D. F. Downing, Orange, N. J.; G. M. Bradford, Mt. Morris; Arthur K. Hoge, Wheeling, W. Va.; H. S. Dorrance, Pittsburgh; James Beebe, Lewes, Del; James W. Esler, Tarentum; David H. Ruben, Washington; R. A. Wilson, Dennison, Ohio; S. G. Moore, Exius, W. Va.; B. L. Ramsey, Butler; D. O. Todd, Trafford; Edward Jackson, Denver, Colo.; J. L. Amshell, Pittsburgh.

Dr. O. Pine queries: While it is not bad to quote the ancients who knew some things, why not stick more to those moderns who know more things? Why vainly compare the surgery of Moses with that of the trained surgeon of to-day, or Hippocrates or Galen with the post-Pasteur physician?

THE

MEDICAL SOCIETY OF DELAWARE

ORIGINAL ARTICLE

CANCER OF THE UTERUS*

I. J. MacCOLLUM, M.D.

WYOMING, DEL.

Cancer seems to be more prevalent in recent years; especially does this seem to be true of cancer of the uterus. Before going directly into consideration of cancer of the uterus I shall give a brief outline of causes in general.

Cancer is more prevalent in the more civilized and highly educated people, although all races of people are affected. There is no predilection for any locality. It is more common in women than in men, the ratio being almost two to one. It is infrequent before twenty years of age and is most prevalent between fifty and sixty; one out of every eight women above forty years of age dies of this disease. Cancer attacks the strong and healthy as well as the weak and debilitated. Cancer in the early stage is a local disease. Cancer is not hereditary, it is neither contagious nor infectious. Cancer disseminates itself by growth (invasion and proliferation); also by being carried to adjacent structures and other parts of the body by the blood and lymph. Although cancer is seldom spread through circulating blood, it does occur. Metastasis usually occurs through the lymph stream.

I am unable to tell you the cause of cancer. If I were able to answer this important question, I should consider that we were a long way toward the treatment and cure of this dreadful disease. There have been many theories advanced, among them the traumatic, the parasitic, and the inclusion theory. None of the theories so far advanced seems to fit any proportionate number of cases to justify it being considered a cause for any or all forms of cancer. Possibly the most frequently advanced theory, that of traumatism and irritation, would seem to go hand in hand with the frequency of cancer of the uterus, as cancer of the uterus is more common in the married than in the unmarried woman, and in women who have borne children than in those who have not.

Symptoms referable to cancer of the uterus are the same as the symptoms of cancer in any other part of the body, but because it is a specialized and an internal organ, because it functionates only during certain periods of life and because it is a genital organ, which often is the cause of patients being dilatory in seeking professional advice, the symptoms may be masked, and often a patient will report for treatment with a well developed, and possibly an inoperable cancer of the uterus without having the slightest suspicion of the grave danger of her trouble.

There is, as a general rule, a serous, or serosanguineous discharge, which is very irritating, and which sooner or later becomes offensive. If the cancer is allowed to progress this discharge becomes worse, and sooner or later becomes hemorrhagic and more offensive, due to necrosis and disintegration of the cancerous tissue.

Oftentimes there is an undue amount of blood lost at, or an undue prolongation of, the menses; or there may be, following the climacteric, a more or less profuse bleeding which causes the patient to believe the menses have returned. Any postclimacteric bleeding should always be considered as a grave signal, and cancer should not be excluded until after a thorough and complete examination.

Pain is a variable symptom, and often does not manifest itself until late. To wait for it, and to say there is no cancer because there is no pain, means a loss of valuable time and may mean loss of life.

There should always be a vaginal examination to determine if there is any growth or suspicious lesion. If refused this examination, it is better not to treat the patient, for if one does treat a patient who has refused an examination, he is held responsible.

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*Read before the Medical Society of Delaware, Dover, Oct. 10, 1922.

Cancer of the vaginal portion of the uterus presents nodular-like projections resembling a cauliflower, and is often spoken of as a cauliflower cancer. Later this mass disintegrates due to necrosis, leaving a crater-like cavity with friable, sloughing, and disintegrating edges, which bleed freely on the slightest amount of traumatism.

The adenocarcinoma, or cylindrical cell cancer of the cervical canal may not present any enlargement and be unsuspected in its early stages. It sooner or later makes its appearance at the external os or else breaks through the cervical wall. Later disintegration takes place and the entire cervix is left a sloughing necrotic ulcer. The invasion penetrates the parametric tissue early, while the vaginal portion of the cervix is involved late.

Adenocarcinoma of the body of the uterus as a rule does not cause any enlargement of the uterus until well developed. Digital exploration of the uterine cavity will often reveal a soft friable mass of cancerous tissue. There should whenever possible be sections and scrapings of the diseased area, which should be subjected to microscopic study.

The pallor and icteroid condition of the skin, associated with progressive emaciation and asthena, which symptom, complex is spoken of as cancerous cachexia, are late symptoms and should not be looked for except in neglected and in inoperable cases.

In one case that I recently had, the cervix was completely closed by adhesions. There were no symptoms until nine days before the operation, and then only a slight amount of hemorrhage every second or third day while urinating. This caused the patient to refer her trouble to the bladder. On examination there was a small polypus at the external os, which bled freely while being examined. There was no apparent enlargement of the uterus, but because of her age, and the possibility of it being cancerous there was a complete removal of the uterus. After removal we found a well developed adenocarcinoma of the body of the uterus. I cite this case to emphasize that cancer can exist with comparatively no symptoms and may be totally unsuspected until there is extensive involvement.

Cancer of the portiovaginals of the uterus is most frequent and the squamous cell epithelioma the most common form of uterine cancer. The adeno-carcinoma of the cervical canal is next in frequency and adenocarcinoma of the body of the uterus is less frequent and is most amenable to cure.

I will not go into the various operative procedures. This will depend largely upon the amount of involvement, and the condition of the patient, as well as to the judgment of the operator.

I would like to emphasize that x-ray and radium do not cure cancer. They are a means of controlling or inhibiting its growth and are to be used in conjunction with operative procedures, and in inoperable cases as a palliative measure.

Cancer, I stated, was a local disease in its early stages, and could be cured by a complete removal, but if neglected means inevitable death. At present 9 out of 10 cases die because of neglect and ignorance.

The time is at hand when we shall not wait for the menopause to see what is going to develop, when we wake up to find a patient has passed from an operable to an inoperable, from a local to a constitutional, from a curable to a noncurable disease. I say the time of "watchful waiting" has passed, and it behooves us as medical men to be on the alert to recognize cancer, and precancerous conditions, and thus avoid the dastardly consequences which cancer has caused to many who have suffered from such an ill-fated disease.

EDITORIALS

1789-1923

The one hundred and thirty-fourth Annual Session of the Medical Society of Delaware was held at Middletown on Monday and Tuesday, October 8th and 9th, 1923. While perhaps not the largest session in our history, it was one of the most helpful and successful. It was unique in that every paper on the program was delivered as scheduled; though the number of papers read was slightly less than at some of our meetings, their quality has never been surpassed at any previous session. The discussions were participated in by more of our own members than is the usual case, a most propitious sign.

The most important transaction of the Society was the adoption of new By-Laws, supplanting those of 1905, as amended from time to time. There were no radical changes made in these By-Laws, but the new code is more accessible, more concise, and more complete. The old constitution was abolished, as this Society is a corporation under the Laws of Delaware, and the usual broad powers of a constitution are embodied in the charter from the state. Those features found in the constitution and not in the charter are embodied in the new By-Laws, thus placing all the law and regulations on any one subject under one heading at one place. This we consider an improvement. The reading and adoption of these By-Laws consumed one whole session, thus accounting for the slight decrease in the number of papers read.

The most important transactions of the House of Delegates were (1) the decision to continue the publication of a journal as a Delaware section of the Atlantic Medical Journal, which is being well received by most of our members; (2) the decision not to undertake a test case in the courts to determine the constitutionality of the state prohibition laws, about which there are grave doubts; and (3) the decision to appeal to the Pennsylvania Board of Medical Education and Licensure for a "square deal" in admitting internes from the hospitals of Delaware to the Pennsylvania examinations. The charge is made that our hospitals and internes are being discriminated against, and is of sufficient importance to warrant official investigation. This will be done through the proper Delaware authorities, with the support of our Medical Society. The other transactions were largely of a routine character, chief of which was the report of the treasurer, which showed a healthy condition of the treasury for a society as small as ours.

The president-elect is Dr. J. Roscoe Elliott, of Laurel, who is a real live wire in his community and of whom much is expected. The Society, under the presidency of Dr. Dorsey W. Lewis, of Middletown, is prospering apace this year, and he will vacate his office on January 1st with the thanks and well-wishes of the whole membership for his interested and able leadership. The next annual session will be held at Milford, on the second Tuesday and Wednesday of October, 1924.

The social features of the meeting were of themselves well worth the time and trouble of attending the session. The informal reception given the members on Monday evening by Dr. and Mrs. Lewis at their beautiful home has set a standard that will be difficult to maintain. All in all, the session just over will go down in the record as one of the most pleasing and profitable of all our sessions. W. E. B.

THE RISE AND FALL IN THE MEDICAL PRACTICE

From a perfunctory gaze at the tongue and a careless feeling of the pulse to a one hundred dollars' worth of scrunity of all the functions of the body, is a big jump, and yet the medical profession accomplished the feat, and landed—on the head. There was a time, not so very long ago, when the sober-looking doctor asked a few questions, performed a few minor medical rites and wrote out a prescription for "malaria," a "torpid liver," or a "run down system," all for 50 cents. He frequently overlooked nephritis, cardiac disease, or tuberculosis. Nowadays, the up-to-the-minute doctor takes a complete history, percusses, auscultates, palpates, radiographs, and applies all sorts of tests, most of them of academic interest, and frequently overlooks the neurotic whose symptoms are the outward manifestations of inward conflicts. Extraction of the teeth, tonsillectomy, appendectomy, or rest cure, are not going to help the woman whose chief difficulty is maladjustment and her main complaint an erring or indifferent husband. Laboratory tests are not going to disclose these underlying causes, but an intimate talk will bare the soul of the suffering patient, and a sympathetic attitude toward her troubles will often assist materially in the adjustments which she must make before the source of her symptoms can be eliminated.

We are so apt to consider the material aspects of the body to the exclusion of the psychic, that no wonder many of the neurotic patients leave us in disgust and run to the various cults and fakes that have become a malignant growth on our social body. A. R.

THE EARLY RECOGNITION OF TUBERCULOSIS

The diagnosis of pulmonary tuberculosis in the early stages is beset with so many difficulties that any help we can get from other than clinical sources is truly welcome.

While the radiologist promised a great deal and fell down on some of the claims, yet it looks as though we will have to look to him for assistance in making our diagnosis in diseases of the chest. In pulmonary tuberculosis, pathologic events cast their shadows behind them and as soon as we are able to interpret them correctly, the diagnosis will be fairly simplified. Unfortunately, we are still far from this ideal.

In a recent contribution to the American Journal of Roentgenology Dr. Lloyd B. Crow advances the claim that pulmonary tuberculosis produces definite changes in the posterior mediastinal glands, and by proper technic, these glands may be visualized. Increased density in the postcardiac space due to the enlargement of these glands proves, in the opinion of the author, the existence of tuberculosis.

It would seem that clinically this condition should elicit what is known as the D'Espine sign. Yet there is by no means a unanimity of opinion as the diagnostic value of the latter. In this matter both the clinician and roentgenologist should advance very cautiously, if their conclusions are to be of real value. The best results will be achieved by the coöperation of the two, one checking up the findings of the other. A. R.

LITTLE JOURNEYS IN GENERAL PRACTICE

BY A GENERAL PRACTITIONER

ROUGH ROADS

The roadway was rather rough along part of my journey. The sharp turns of the road kept hidden from view dangerous railroad crossings and there were many rocks and sharp stones of criticism, as well as much dust. I like to compare the "dangerous crossings" as the meeting with dangerous and vindictive competitors, who have enough influence to injure us seriously by their dishonest and untruthful remarks. The "sharp cuts" we all often get from our neighboring practitioner, and the "rough stones" and "bumps" come from the public itself and are very often caused by our own insufficiency, our lack of tact, or our mistaken diagnoses. The "dust" is that dirty, slanderous stuff, that so many of our dishonest patients throw about our ability or integrity; these fellows who try to avoid paying their bills and when we get after them start some sort of untruthful or scandalous story about us, either about our professional capability, or our private family affairs, or about our religion, or our politics.

Every doctor, whether he lives in the city or the country, whether is he is "big" or a "little" man, whether he be a specialist or a general practitioner, meets very frequently with all of these troubles along his professional pathway.

I often enjoy likening the sharp turns in our road of professional travel to the sudden changes a patient takes in his uneducated grasp after health and immediate cure. Let us say the patient has some chronic disease; he is progressing nicely, you are doing everything possible under the conditions, and the patient's body is responding promptly to the recognized line of treatment. You have been called out of a nice warm bed at night many times to satisfy his immediate needs during the critical stage of his disease. You have been faithful and painstaking and you feel that he is slowly on the safe road. You get ready to make your daily call upon him, when the 'phone rings and you are informed by the patient's wife or friend, as the case may be, that "your services are no longer needed; that Dr. Dash has been called in to take your place."

You realize that if Dr. Dash is a fair and honest competitor he will continue doing as you have done. That he will follow your treatment, which is the only correct treatment for this particular patient's case. Ah! there is the railroad track, the train in the person of Dr. Dash is speeding toward you! What kind of an engineer is running Dr. Dash's professional train of ethics? You are at a dangerous crossing. What can you do? Nothing. It all depends upon Dr. Dash. He it is who is in a position to undo all of your work, your patient service, your study, your loss of sleep, and perhaps your reputation in this and adjacent families.

Dr. Dash may be a brilliant physician, who truly "knows his business," but perhaps doesn't like you because you sing in the Methodist choir and he directs the choir in the Baptist Church. He may belong to several lodges of which you are not a member, or he may just feel "sore" at some fancied slight. It is all up to him. If the patient gets well Dr. Dash will reap the credit even though you did all of the work. If the patient dies, Dr. Dash was "called in too late. What a shame he wasn't called sooner!" If Dr. Dash does not believe in professional ethics, if his dislike of you is sufficient, he can cause you very, very much damage in a case like this. He can often injure your reputation very seriously.

Then, every one of us meet, almost daily, with some fellow-doctor whose prospective of life is much like the inside of a lemon—all dark and acid. He may not be a dangerous foeman, he may not be even half-way successful in his practice, but he is bound to have some patients, and when he, by inuendo and suggestion, intimates that you are a "big stiff," a "blow-head" who doesn't "know anything" and other sundry "pleasing" nicknames such as "he ougten ter be allowed ter treat a dog," he hurts you. The patient he mentions the fact (?) to tells his neighbor, that neighbor tells his wife and the whole "back fence news wire" spreads it that you are nowhere as good a doctor as you pretend. You are a "bluffer" or a "society doctor" or something of the like. These "sharp stones" are not serious drawbacks to you but they do hurt your pocketbook and your pride and do not aid your reputation.

Many of these "bad roadways" can be improved. Professional jealousy, petty profes-

(Concluded on page xiv)

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ADDRESS

PERILS OF PRESENT MEDICAL EXISTENCE*

W. L. ESTES, JR., M.D.

BETHLEHEM, PA.

First, I wish to express my appreciation of the honor that the Surgical Section has seen fit to bestow upon me in electing me its chairman, and I desire to take this opportunity to assure you of my deep sensibility of the privilege this entails and to hope that our program and its conduct may still bespeak your confidence and regard at its conclusion.

The demands made upon us in our profession are quite multifarious and exacting enough to occupy most of our working hours. We are fairly fortunate, as surgeons, in commanding a regularity of schedule and the ability to apportion the daily grind in a pleasant procession of profitable hours, but, besides our strictly medical cares, none of us can escape the obligation to spread the medical gospel, or lend the benefit of medical training and knowledge to the communities in which we find ourselves—to accept positions in whose congenial atmosphere we are regarded as possessors of technical information, consultants in medical matters, or medical experts. Our peculiar bent may lead us to health boards, charity organizations or chambers of commerce, or we may be in demand as speakers at public health meetings, as in the cancer or antituberculosis propaganda. More rarely are we prevailed upon to seek political office—to serve on school boards, in state assemblies or congress, or even in the Cabinet.

In these and many other ways the ethics and habits of our calling make us ready to serve all other walks of life, and in comparison little time or thought has been given to the defense and protection of our own, either through a false conception that medicine has no need or must not stoop to conquer, or for lack of suspicion that potential evil or menace may become actual injury. Even if aroused we are likely to be lulled by the thought of the special committees organized for our protection, and that to see that they exist ends our responsibility.

In recent years, legislation and regulation have been so rife and active that the flood of radical innovations has washed up even to our doors, and though we have been fairly awakened by enactments such as the Workmen's Compensation Act, it seems timely, in view of recent legislative history, to sound warnings from every available rostrum, that no step or effort be left untaken to prevent individual lethargy, or to thwart the passage of inimical measures which might prove disastrous to us all.

I have, therefore, ventured to trespass upon our Simon-pure surgical thought to cite certain perils that beset our present medical existence:

I. CHIROPRACTORS

The attempts by massaging and manipulating cults, such as the Chiropractors, to treat all manifestations of disease, and to assume the privileges of a graduate in medicine without a license or submitting to an examination by a proper examining board, are becoming increasingly bold. Their lack of proper medical preparation, the teaching of untenable theories—even that diphtheria is not bacterial in origin but due to a minor displacement of a cervical vertebra—should emphasize the need for the protection of the public against reckless, dangerous and indiscriminate practice of this sort, which we, of our training and knowledge, are obliged to prevent.

Our active and watchful Public Health Legislation Committee, under the chairmanship of Dr. Knowles, has, together with the Medical Legislative Conference, done much to prevent the passage of legislation that will give them legal recognition without protection of the public, and there is a natural inclination to feel that as long as these committees exist there is little for us as individuals to do.

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*Address of the Chairman, read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 2, 1923.

We can, however, well arm the Committee's efforts by reporting, either directly through our county medical society or through the State Society offices, not only flagrant violations, but all instances of which we have knowledge where attempts have been made by members of these cults to practice medicine and especially to treat infections or contagious diseases. We will not only obtain conviction under the law but many cases will be on record which otherwise would slip by unknown. The greater wealth of malpractice citations cannot but lend increasing proof for arguments for proper regulation and relegation of incompetent usurpers.

II. MEDICAL LEGISLATION

Medical legislation of immediate moment to this Section centers about recent developments in the Workmen's Compensation Act as applied to Pennsylvania. A most complete, excellent and timely résumé of our status under this act was presented by our last year's chairman, Dr. Wood. During the year, the Legislature failed to pass the amendments to the law brought before them; so that the great necessity still exists for proper recognition of our services under the law. In the coming two years, every possible aid should be given, and effort made to obtain passage of a bill that shall adequately safeguard our rights.

Of special concern is the ruling of a year ago which denied the surgeon the right to collect fees for his services in hospital compensation cases, under which decision certain insurance companies have been refusing to pay bills for surgeon's fees in these cases. We have all, hitherto, been forced to submit. Now, however, with the permission of Dr. W. P. Walker, of Bethlehem, to whose persistent efforts the favorable conclusion is due, I may here cite a very recent ruling by a district referee of the State Workmen's Compensation Board.

In certain hospitals surgeons receive no salary but charge patients in private rooms and pay wards directly for surgical attention, and care only for charity cases without charge. Compensation cases are admitted routinely to pay wards, not to the charity wards. All cases in pay wards are expected to pay not only hospital charges but a moderate fee for services of the surgeons as well as an operating-room charge. Partial-pay cases—cases that cannot pay a full ward charge—are placed in the charity space. It has been our contention that compensation cases placed in pay wards, occupying pay beds, should not be treated any differently from other similar cases. They are occupying space reserved for persons able to pay, and the full customary charge should be demanded of them. The referee has ruled that in the above method of conduct of these cases, a surgeon's fee is *properly payable*. It is obvious that similar disposition of these cases in all hospitals with similar staff affiliations should reap the same result. Some insurance companies have been paying our bills. If the remainder now hold out against this ruling, it would not be too far a cry to inform the industrial corporations as to the companies that are meeting their full obligations and those that are not.

Another question under this act has been raised by a sister medical society in New Jersey. Testimony before the courts or boards of adjudication, by competent expert witnesses, has often been unduly at variance. Would it not be well to have incorporated in the law, or in an authoritative interpretation thereof, just how much disability the loss of a foot, a leg or an eye constitutes, and so avoid medical dispute as well as delay and litigation concerning the just rights of an injured employee?

We are further advised by the report of the Legislative Committee that in the next session of the Legislature, bills tending to the introduction of some form of health insurance are not unlikely.

The panel system, a special or more favorable form of this insurance, has been in force in England, under which a panel or list of families or individuals is given to one of the physicians who is assigned or agrees to this work. These people may seek him for any and all ailments for a mere nominal fee of sixpense or a shilling. Careful observers have found little to recommend in even this method whereby slipshod and superficial examination is encouraged.

It is high time to counteract these deleterious influences. Every means of publicity and education should be employed. One or two methods suggest themselves as being most pertinent:

A. Bulletins from the Medical Legislative Conference were sent last year to all members of the county societies. To insure due consideration and opportunity for suggestions, would it not be well to have abstracts of these bulletins printed in the county society periodicals, and to have a committee whose special province it is to scrutinize these bulletins and bring important matters up for discussion, devoting ten or fifteen minutes of each county society meeting to a brief consideration of impending or recently enacted legislation? In a vital contingency, an entire session could be devoted to the consideration of a definite topic with appropriate speakers, such as a member of the Committee on Public Health Legislation.

B. Meetings of county societies with legislators: Eleventh hour telegrams of advice or request to our representatives have some effect but actual face to face conference is far better. A few meetings during the year have been held by certain county societies with the state assemblymen and senators who represent them, and the attitude of the medical profession towards pending legislation briefly cited by selected speakers. It is highly recommended that this be made a routine procedure for all county societies for at least one meeting a year. In one instance with which I am familiar the legislators were quite frankly impressed with the justice of the profession's point of view, and an excellent feeling between them and the physicians resulted.

III. COMMERCIALISM

In this age of bargain-counter business, of discounts for cash, and the legitimate catchpennies of business methods, it would be strange indeed if any profession so intimately associated with community life could escape unscathed. Yet no quicker cheapening of our dignity, no more prompt lowering of respect, no more rapid vanishing of honor where honor is due can occur than the descent to the use of these methods by a profession. That in certain portions of our larger communities this evil already has a foothold seems fairly well established. In this connection it might be suggested that the ministers of the Gospel, as one has recently stated, are, in their pitiful salaries, but reaping an old long-standing estimate or negation of their own worth. To underbid for more business should have no place in the honest surgeon's faith or practice. A minimum fee agreement for each city or economic area would go far to eliminate this tendency or temptation. It would be well to root out evil within as well as uproot evil from without.

CONCLUSION

I have merely touched upon a few of the needs for us as surgeons and physicians to use our organization to the full for our protection, maintenance and self-respect. Unquestionably, other phases exist and new variations will arise. May there be more virile and aggressive support of those designated to wage our battles. May we enlist the full weight of our individual attention, thought and action in support of medicine as a profession, that it may remain unsullied by present-day fads and tendencies, and proceed safely along the great path it has so long and so well trod.

ORIGINAL ARTICLES

THE OPHTHALMOSCOPE IN GENERAL MEDICAL DIAGNOSIS*

EDWARD JACKSON, M.D.

DENVER, COLORADO

The ophthalmoscope, invented for the study of eye conditions, has been chiefly applied to the observation of the more gross and obvious alterations that seem important because of their effect on the function of vision. But there are changes in the ocular fundus more subtle, yet perfectly definite and easily discoverable with the ophthalmoscope, that are of great importance through their power to reveal the presence and course of general disease. In the future, medical ophthalmology will become an extremely important diagnostic resource, for the study of general and internal diseases.

A handful of fragments, chipped by the roving prospector from the outcrop of a mineral vein, or gathered from the sand banks of a river, has revealed the rich deposits of silver and gold that yield fortunes, draw men into unexplored regions and change currents of trade and prices in all the markets of the world. The diamond drill, bringing up its little core of rock from deep below the surface of the earth, reveals the whole geology of a region. By it there have been revealed and mapped out in Colorado deposits of coal underlying hundreds of square miles of territory in which no shaft has yet been sunk, over which no railroad is laid out—deposits of coal above which cities will be built and channels of trade will run when those of England, Belgium and the Ruhr are exhausted.

For thousands of years the pulse, felt in a little space at the wrist, by its variations in rate, in strength, in rhythm and quality, was the convincing sign of disease, the basis of pathology and internal medicine. The doctor with his trained finger on the pulse became the oracle, proclaiming the future and prognosticating life and death. Minute particles, submitted to the exact methods of chemical research, or placed beneath the lenses of the microscope, have brought about the great extension of our knowledge and power that has characterized the development of modern medicine. The staining of thin sections, exact biologic experiments with minute proportions of toxins, antitoxins, opsonins and vitamins have created our modern domain of diagnostic and therapeutic power. They have opened new windows through which we look into the workings of natural law, and one of these windows still almost unused and little understood or appreciated, is opened by the ophthalmoscope.

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*Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 3, 1923.

In the eye we have conditions and opportunities particularly favorable for the observation of changes in the living tissues; we have spread out before us samples of all the important general tissues of the body. It is a general law that to understand thoroughly a part, even a very minute part, is to understand the whole. Here we have epithelial, connective and nerve tissues, modified in the direction of transparency so that they transmit light in a way that lays open their secret processes and minute changes to sight, the most highly developed, exact and best-trained of our senses. We see here the development, migration and transformation cells. Edema, exudates, hemorrhage, come and go before our eyes, showing all stages of their cycles. The blood vessels of the body lie in full view, from complete trunks to capillary net-work, and the modifications of the blood, not as found after death, but as they exist during life while the blood is still performing its functions. We see the different lesions passing through the various phases of disease, to recovery or death.

All this may be watched under a most important and serviceable degree of magnification. The exact microscopist appreciates the value of the lower powers of his microscope; and the 10 to 20 diameters under which we see the tissues with the ordinary ophthalmoscope, are readily supplemented by lenses placed before the eye, as in the large fixed ophthalmoscope.

These opportunities were first used for the purpose of better understanding the ocular diseases—cataract, glaucoma, optic nerve atrophy, and the previously unknown lesions of the retina and choroid. To-day let us consider the observations made with the ophthalmoscope as evidences of general processes that go on in similar tissues in all parts of the body; from which evidences, by the constancy of natural processes, the reliability of vital reactions, we may infer with great certainty the existence, character and progress of internal and general disease. From this point of view, ophthalmoscopy furnishes samples of lesions such as are characteristic of the pathologic process that is working elsewhere in the body. For instance, metastatic carcinoma in the choroid has furnished sufficient basis for a diagnosis, even when the primary tumor had not been recognized, and before it was possible to discover its existence or location by the other methods of diagnostic research now known.

Used for this purpose, it was natural that the ophthalmoscope should first bring to our attention general diseases of the vascular system and alterations in the circulation and character of the blood that are found in general disease. These changes were first well studied in connection with diseases marked by ocular lesions that caused impaired vision. From the early days of the ophthalmoscope, seventy years ago, the retinal changes found with chronic Bright's disease attracted attention and were carefully observed by many ophthalmoscopists. But it was only forty years later, when Marcus Gunn[1] pointed out the vascular changes in the retina as significant of the lesions of angiosclerosis, such as develop in the blood vessels of all parts of the body, that their general significance began to be appreciated.

The blood vessels have the same function and the same general structure in every organ of the body. The vascular lesions observed in the eye are very similar to lesions that occur in the vessels of other organs. Even the variations between a terminal and an anastomotic circulation are open to ophthalmoscopic inspection, in the vessels of the retina and the choroid. Every vascular lesion known to general pathology is here available for minute study. Hyperemia, anemia, embolism, thrombosis, infraction, edema, hemorrhage, endo- and periarteritis, phlebitis, atheromatous and calcareous degeneration, general dilatation, aneurism, stenosis, the development of new vessels, their restoration or disappearance, are revealed to prolonged, repeated observations, not in the dead specimen, but in the living process through its whole course. After forty-five years of almost daily use of the ophthalmoscope, I feel I am only beginning to be acquainted with the significant, spontaneous variations of the intra-ocular blood vessels.

But these same vessels are capable of other variations, deliberately produced. One of the spontaneous variations is the pulsation, often seen in the veins in response to changes in venous blood pressure. The pulsation is due to the shifting of balance between the external pressure exerted on the wall of the vessel and the internal pressure, or resistance of the blood stream. When the former increases, the blood stream is narrowed or thinned; when the latter predominates, the vein becomes distended, thicker and broader. The balance between external and internal pressure can be modified by pressure on the exterior of the eyeball.

In 1911, Black,[2] of Denver, called attention to the changes in appearances of the blood vessels on the optic disk that could be produced by pressure upon the eyeball with the tip of the finger through the lid, and to the important indications as to the condition of the vessel walls and the blood pressure that are shown by the amount of pressure that had to be exerted to produce such changes. Since then Bailliart[3] has devised a pressure gauge, in which the pressure exerted is measured by the resistance of a spring and indicated by a scale on the side of the instrument. This instrument I have used some during the last year. The method of using it is to anesthetize the eye with cocain, holocain or butyn, and press the end with the projecting point against the sclera, the pressure being exerted through the finger tip placed at the other end on the rod that acts against the spring. At the same time the observer looks into the eye with the ophthalmoscope and notes the effect produced. A full description of the instrument and the method of using it, with illustrations, was given in the *American Journal of Ophthalmology* by Magitot, of Paris, in October, 1922 (Vol. 5, p. 777). In learning to use it, one can practice steady, definite pressure and the reading of the instrument, by use of the device suggested by Magitot for testing the accuracy of its graduation and working—by pressure on an ordinary balance, such as may be found in any drug store.

With the pressure gauge, one can make a known, definite pressure on the eyeball. When this is added to the intraocular pressure, as ascertained with the tonometer, we know how much pressure is exerted on the retinal vessels to produce any particular effect. The pressure that just produces pulsation in a vein is just above the minimum intravenous pressure. The pressure that excludes the blood column from the vein is just above the maximum pressure in the vein. Similarly the pressure that causes visible pulsation in an artery has just overcome the diastolic arterial pressure; and the pressure that keeps the blood out of the artery, and thus stops pulsation, has overcome the systolic arterial pressure. That which causes the blanching of the general surface of the optic disk is what overcomes the capillary blood pressure.

Knowing, thus, the blood pressure in the retinal blood vessels, we can compare it with the blood pressure as usually taken in the brachial artery with the sphygmomanometer. From such comparison important facts are likely to be deduced. Already this very important deduction has been recorded. In cases of choked disk it is found that the retinal diastolic pressure is high as compared with the general diastolic pressure; although the retinal and general systolic pressures have the normal relation. But Magitot states that in a series of clinical cases it was found that even if there was no choking of the disk, with such relatively high diastolic retinal blood pressure there was always hypertension of the spinal fluid. And he gives a case in which the diagnosis based on this symptom was confirmed by spinal puncture. The study of retinal blood pressure is only just beginning and has thus far been taken up by but a few observers. It illustrates how little the diagnostic possibilities have yet been developed. But it may be noted that the method of measuring blood pressure by direct vision with the ophthalmoscope is probably quite as accurate as the method of measuring with the sphygmomanometer by the sound transmitted through the tissues of the arm, or the feeling of the pulse at the wrist, and its possibilities certainly rival those of the electrocardiograph.

The changes observed in the vessel walls and their pulsation, are not the only cases in which the retinal blood vessels, as seen with the ophthalmoscope, may give important aid for the diagnosis of general diseases. The color, shade and uniformity of the blood column within the vessel may all be very significant. The retina is embryologically, and probably functionally, a part of the central nervous system, spread out for inspection by the ophthalmoscope. The changes in the vessels of the retina are very suggestive of changes going on in the unseen vessels of the cerebrum, cerebellum, pons and medulla. But the color of the blood is very closely related to its composition, and any change in composition discoverable in the retina, is equally operative in every organ and tissue of the body.

In 1880, Dr. Albert G. Heyl,[4] of Philadelphia, reported the changes in the color of the blood observed in the eye of a patient suffering from diabetes, to which he gave the name of intraocular lipemia. Since then about thirty cases have been reported in which this condition has been observed, most of which but not all, were diabetics; and such cases occur more frequently than has been supposed. Within a year more than a half dozen new cases have appeared in the literature of this country. Gray and Root[5] pointed out last April that this peculiar color of the retinal vessels appeared when the blood held lipoids to the amount of 6% and disappeared when they fell to 3%. Heine[6] had set the percentage of blood fat at which retinal lipemia appeared at 4 to 8 per cent, and McGuire[7] and Wagener[8] agreed with this. The latter showed me, in June, a case in which the blood had regained its normal appearance in the preceding week, coincident with a decrease in the blood lipoids below 4 per cent.

But last month, McCann[9] published a case in which the appearances of lipemia were present when the blood contained 9.5 per cent of fats, but absent a week later when the fat content was slightly higher; and also absent in another patient whose percentage of blood fat was about as high. He thinks this agrees with the observation of Wishart,[10] that the blood plasma may appear quite milky in some cases with a certain percentage of fat, and in others quite clear, although the percentage of fat contained is equal or higher. McCann suggests that the appearance is not due to the fat in the blood in these cases, but rather to the condition or character of the fat. He points out, too, that in such a case the blood drawn from a vein is not abnormal in appearance, and suggests that its appearance in the retinal vessels "may be due to a film of fatty lymph in the perivascular spaces, or to fat deposits in the adventitia."

I have spoken of this phase of ophthalmoscopic diagnosis somewhat in detail because it illustrates two things: The fact that these questions are live questions, still to be decided, very much up-to-date; and also, the very intimate relation between ophthalmoscopic observation and laboratory findings.

My own special interest in the color of the blood stream in the retina took a slightly different direction. Early I had the opportunity of using the ophthalmoscope on some cases of anemia, including one of pernicious anemia; and later I had under observation two cases of erythremia, in one of which the blood count showed the erythrocytes to be twice as numerous as the normal. These cases impressed me strongly with the importance of viewing the ocular fundus by light of definite and fixed color value, and this point has been emphasized by the importance recently attached to the examination of the fundus by "red free" light. It would be interesting to examine by such light the retinal vessels and the general fundus hue in cases of lipemia, pernicious and other anemias and erythremia.

This matter of the importance of the *color of the light* used for ophthalmoscopic examination, is only just beginning to be appreciated. When we shifted from the kerosene or gas flame to the early Welsbach mantles, the optic disk took on a pallor that suggested optic atrophy, and it required a reëducation in the significance of the color seen, before sound judgment could be reached regarding it. The variations in color of the light constitute one of the worst defects of the electric ophthalmoscope. The small lamps used quickly change in color, the light becoming more red as the lamp deteriorates; and the rheostat adjustment, to make the light brighter or dimmer, introduces endless confusion as to relative color values.

There is every probability that careful trial of light from other parts of the spectrum will bring to our knowledge other phenomena quite as important as any that have been revealed by the use of "red-free" light. Let us remember that the spectroscope applied to the stars has revealed, not only their chemical composition, but their rate of movement in the heavens. The heliospectrograph, using monochromatic light, has shown much of the constitution of the sun's atmosphere, the distribution of its clouds of calcium and hydrogen gas, and the working of electric force in its cyclones that cause the sun spots. Of the possibility of light transmitted from the interior of the eye revealing life processes not yet known, we cannot now form any conception. The examination of the ocular fundus by polarized light has been entered upon, and the determination of the chemical composition of certain crystals in the retina by this means has recently been reported.

The amount of information already stored in the literature of ophthalmoscopy is large. It is impossible to refer now to all parts of it with so much detail as has been given regarding studies of the retinal vessels. Among changes revealed to the first users of the ophthalmoscope were those of swelling and obscuration of the head of the optic nerve. But 70 years have not entirely cleared up the distinction between edema and inflammation, papilledema and optic neuritis. The work of our contemporaries, among whom de Schweinitz, Holloway and Walter Parker are well known to most of us, is doing much to bring order in the current literature of this subject; but the confusion in the older literature must remain a source of misapprehension and uncertainty for years to come. The observations of Benedict[11] regarding the changes in the optic nerve head significant of pituitary disease seem to make a distinct advance in medical diagnosis with the ophthalmoscope, but they need confirmation.

My own feeling is that the minute, repeated or daily study of slight changes in the optic disk and its immediate neighborhood, in their early stages, may yield evidence as to the seat and character of general disease, or disease of structures outside the eye but near to it, that will enable the experienced ophthalmoscopist to gain important information therefrom, even to be compared with the diagnostic information which the pediatrist or the dermatologist gets from examination of a skin eruption.

Remember the eruptions of smallpox and syphilis have been studied minutely for hundreds of years. But we rarely see the optic nerve lesions of mumps, chicken pox, typhoid fever, cerebrospinal fever or influenza, except in the few cases in which the process has gone on to optic atrophy and permanent impairment of vision. Thanks to the disturbing effect of diplopia we did get a chance to see early cases of epidemic meningitis; and in many communities the ophthalmoscopist first recognized not only transient changes in the optic nerve, but also the presence of this epidemic disease.

The retina is both a peripheral nerve ending and a part of the central nervous system, so different from any other part of the nervous system that its pathologic problems constitute a class by themselves. Very little light is thrown upon them from analogy with lesions in other parts of the body, and only functional and ophthalmoscopic studies during life, followed by histologic study after removal from the body, can be expected to help us much to a better understanding of retinal disease, or the changes in it that are due to poisons, defective blood supplies, and the disorganizing influence of toxins or perverted endocrine substances.

Improved methods of ophthalmoscopic examination, of which the use of monochromatic light is one of the most promising, seem to promise much in this direction. Only last month I saw, with the centric ophthalmoscopy of Gullstrand and also by "red-free" light, a form of slight exudate into the retina that I had never recognized before. It was perfectly evident, when the eye was compared with its healthy fellow, and involved the macula and some of the neighboring parts of the retina; yet the vision was only reduced to 1., that of the fellow eye being 1.3.

In the eye the trunks and endings of general sensory nerves are to be studied in the cornea with the corneal miscroscope. Motor nerves and muscle cells are only available for ophthalmoscopic study in the arterial walls. But the iris offers a most inviting, promising, and fascinating field for their study. The connective tissues modified into various forms, some relatively transparent, others more opaque, present a wide range of ophthalmoscopic pictures that there is not time here to mention. Go back into medical history and you find the early studies of the general process of inflammation largely made upon the eye. The advantages it offers for such studies still hold, and their possible results are far from exhausted.

From this sketch, suggesting possibilities for ophthalmoscopy in the broad field of medical diagnosis, let us turn for a moment to the question of practical interest. How are men to prepare themselves for original investigation in this direction, or to apply a knowledge of what has already been discovered? Two things are necessary: 1. A knowledge and understanding of the facts already known, and the storing and arrangement of them in the mind. 2. Most thorough training of the sense of sight and the powers of discrimination in the observation of what is revealed by the ophthalmoscope.

We sometimes urge upon the attention of men who are working in other branches of medicine the importance of symptoms and changes revealed by the ophthalmoscope and the value of becoming acquainted with this instrument. I have several friends among the internists, and especially among the neurologists, who use the instrument and quickly recognize a choked disk or an albuminuric retinitis, or the retinal arterial pulsation of aortic regurgitation. But if these have cases of beginning optic neuritis or doubtful change in the retinal vessels, they are the first to ask help in the diagnosis.

The full appreciation of the less obvious and striking ophthalmoscopic changes that enormously extend the field for ophthalmoscopic diagnosis, the pushing of investigation into the significance, the frequency of such changes, their reliability as diagnostic guides, and the indications they give for therapeutic measures, must all rest with those who have studied ophthalmoscopy long, persistently and intelligently, who, by the widest reading concerning it and years of development of their skill as observers, have attained an exceptional mastery of the field ophthalmoscopy opens to us. My wish is to urge all who work with this instrument to strive to extend, daily, the limits of their knowledge and skill, and the limits of the general knowledge and achievement of our profession.

There was recently in Great Britain, where the lines are more sharply drawn between physicians and surgeons, a spirited discussion as to whether there should not be ophthalmic physicians as well as ophthalmic surgeons attached to hospital staffs. In this country there is, happily, less of an educational gap between the two wings of the army of workers for the general health. We have all had a good start towards an understanding of internal medicine. In so far as we have had such a start we should utilize it, by keeping on the lookout and using every opportunity, and demanding of general practitioners and internists their help in utilizing every opportunity to explore this great unoccupied field of general medical diagnosis.

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PRACTICAL HELIOTHERAPY*

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Air, food and light are commonly considered the essentials to life. Volumes have been written on the subject of air and of ventilation; no one subject in medicine has received more attention than food; but it is remarkable how little serious attention has been given to the subject of light. We know that deprived of light, plants and animals grow pale and ghostlike, sicken and die. We know in a general way that many disease organisms flourish in darkness and are destroyed by sunlight. In spite of this it is only the occasional physician who has methodically used sunlight to promote growth and to combat disease.

In recent years Rollier and his associates have attracted considerable attention by their use of sunlight as a remedial agent in surgical tuberculosis. Stimulated by them, various institutions in this country have introduced heliotherapy, and scientific articles upon sunlight and artificial light have appeared in our medical journals.

It is still, however, the exceptional physician who has paid any attention to sunlight as a therapeutic aid. There is a probability that the publicity given the work of Rollier has had in it too much tendency to advertise the climate of the Swiss Alps, and that this has been discouraging to those of us who cannot enjoy these climatic advantages. A climate which makes it possible for naked children to play in the snow in comfort is so different from our winter climate with its cold, damp winds, that we forget that the same sun that shines on the Swiss Alps shines on Pennsylvania, and that our winter lasts only a few months of the year. There is also a probability that some of the scientific articles on heliotherapy have been a trifle discouraging to many of us. We have been left wondering as to the rôle played by the infra-red rays, the ultraviolet rays, or the air bath. Our attention has been so attracted to the various types of lamps used in artificial heliotherapy that we have forgotten that the sun is the one lamp approved by all.

There is much in heliotherapy that is yet unknown or at best only theoretical. It has not been proved to the satisfaction of all which of the sun's rays have beneficial effects. The exact rôle played by the pigment in the skin in its reaction to these sun rays is not entirely clear. Whether the beneficial effect of the rays is due to some complex chemical action or to mechanical stimulation of nerve endings, appears still to be open to discussion. Fortunately the progress of medicine has never been halted to wait for scientific explanations. When experience has proved a remedy of value it has been used, and sooner or later the scientific reason has been given. There is no reason why we should have our attention detracted from the value of sunlight by the scientific discussion of why it is of such value and how it brings about its changes in physical condition.

The following report is presented to you, not as a contribution to the scientific work done on heliotherapy but rather as a report of a purely empirical effort to utilize the sun's rays in a simple and practical manner in treating tuberculous and undernourished children.

The State Sanatorium at Cresson is located on the top of the Allegheny Mountains where weather conditions are as severe as in any part of Pennsylvania. Since 1913 approximately 250 beds have been used for the treatment of children between the ages of 6 and 16 years. These children are tuberculous or of the type ordinarily spoken of as pretuberculous. Approximately 10% have had positive sputum. The majority have been taken from homes where they have been exposed for some time to open cases of tuberculosis. They are undernourished, with a tendency to irregularity of temperature. Glandular enlargement and râles are present in most of them. Purely surgical tuberculosis has not been admitted to the institution except where complicated by pulmonary tuberculosis.

From 1913 until the spring of 1919 these children were treated in the ordinary manner. They were kept in the open air as much as possible, were sent to an open air school when their physical condition permitted, but no special effort was made to expose their bodies to the sun.

In 1919 it was decided to try the results of sun exposure. The children were divided into two classes. The first class consisted of those who had complicating surgical tuberculosis or who were too sick to be allowed school and playground activities. The second and much larger class consisted of the children who went to school and exercised on the playground.

The first class was treated after the method of Rollier. Under the eye of the nurse the children were given sun exposure, gradually increasing the area exposed and the time of exposure. At first the feet and legs as high as the knees were left uncovered for fifteen or twenty minutes daily. Special care was used to avoid sunburn. Gradually increasing the time and area, by the end of the third week the entire body could be exposed to the sun. An arbitrary maximum of three hours' exposure daily was decided upon, this being divided into two periods of an hour and a half each.

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While the results secured from this treatment have not been perfect, they have been so encouraging that we would not be willing to give it up. Contrary to our fears no bad results were seen even in the positive sputum cases. In only a few cases was there a tendency to headache, rise of temperature or muscular pains after exposure. In most of the cases, headache and rise of temperature were controlled by protecting the head with a straw hat. The good results were shown by the rapid disappearance of cough and of joint pains, the drying up of discharging sinuses, greater regularity of temperature, and the rapid filling out of wasted muscles even in cases taking no exercise. The children have been happier, their appetites better and their gain in weight more rapid than when treated in their beds by former methods.

In treating the larger class of ambulatory children it seemed inadvisable to restrict normal activity or to interfere with school work to the extent necessary for carrying out this complete heliotherapy treatment. A modified form of treatment was therefore adopted. The boys were dressed in the lightest cotton bathing suits that could be procured. For the girls a loose-fitting, one-piece, bifurcated garment was made, reaching from the angles of the scapulæ to the middle of the thighs, and held up by narrow shoulder straps. Shoes, stockings and underclothes were discarded. These suits were worn constantly at school and at play. It was the original intention to dress half the children in this manner, allowing the remainder to wear the clothing usually considered necessary, hoping in this way to secure a check on our results. This plan had to be abandoned for the sake of peace, as the undress uniform proved too popular.

While it is inadvisable to be too positive as to the relations between cause and effect, it is the opinion of those who have been caring for our children the past ten years that they have never done as well or improved as rapidly as they have since the introduction of heliotherapy. It is certain they have never been as happy or looked as well. During the period of sun treatment the children have enjoyed remarkable freedom from ordinary colds and nasal infections, in spite of the fact that they have worn their scanty uniforms on the playground during rains as well as in the sunshine. Their eyes have seemed brighter, their vitality greater, their appetites better, their sleep sounder, and their improvement more rapid than ever before.

It is always easy to become enthusiastic over anything new in the treatment of tuberculosis. Given proper regulation of life and activities the general tendency of the disease is towards improvement. The tendency of the patient, and often of the enthusiastic physician, is to credit this improvement to whatever new or unusual treatment was being tried at the time. The general impressions of those who are handling tuberculosis cases in large numbers, who have from repeated disappointment lost the beautiful credulity of the enthusiastic beginner, are often of greater real value than are the statistics of the enthusiast.

At the Cresson Sanatorium we have been fortunate in retaining a considerable number of our staff ever since the early days of the institution. Five years ago the freely expressed opinion of these unprejudiced and undeluded observers was that one winter was worth two summers in the treatment of tuberculosis. After five summers of heliotherapy this feeling has unconsciously changed, and the coming of winter with its long rows of sunless days, is now dreaded, where formerly it was welcomed. To one who knows the wisdom and the freedom from delusion of the level-headed doctor or nurse who has watched fifteen thousand patients pass through a sanatorium, this means more than the statistics of the enthusiast.

DISCUSSION

Dr. Myer Solis-Cohen (Philadelphia, Pa.): Mr. Chairman, may Dr. Turnbull give us a little more detail of the technic of this heliotherapy as practiced by him; just how he employs it and how the children are placed; what are the amount and character of the exposure, and what he uses to cover the rest of the body; at what temperatures he gives these exposures, and if in winter he gives it in the open, or whether the glass will prevent some of these beneficial rays from reaching the patient, so that the treatment cannot be given in winter? Does he use it in cases of peritonitis, in which there is nothing else that we can do and in which this would seem very advisable?

Dr. John M. Higgins (Sayre, Pa.): I should like to ask Dr. Turnbull if it is advisable to start this treatment with a very sick individual in the winter, or if it must be instituted first in the summer?

Dr. Turnbull (in closing): I intentionally left out a whole lot of detail about heliotherapy work because I did not want to bore you, and also because there is a lot of it that is purely experimental and cannot be very definitely proved.

The question of using it in winter is unfortunately one of the things that is a great handicap. Of course, the lamps have great value, but those who have used heliotherapy are not quite sure that they have the same value as the actual sun rays. They do have the great advantage that they can be used in the winter when we may get weeks at a time without a bit of sunlight. The most discouraging thing is the fact that we do have to stop heliotherapy in the winter months unless we are equipped with lamps. In treating a large number of children the necessary number of lamps required is usually a pretty serious proposition. They cost money and a lot of work and it takes a lot of equipment to handle them satisfactorily. It is usually supposed that the ultraviolet rays are the most valuable in securing results—"usually supposed" because all do not agree on it. There is no doubt that the air bath and the heat rays do have some beneficial results; but it is the ultraviolet that has the greatest effect. These ultraviolet rays are entirely cut off by ordinary glass; therefore in giving heliotherapy, it must be without intervening glass. Quartz is what is used in the lamps.

As to the use of heliotherapy in active tuberculosis, my own opinion is that the Swiss observers have been entirely too pessimistic. I think they are not very anxious for you to ship pulmonary tuberculosis to Switzerland; they would be very much better satisfied to have you keep it here. Therefore, I think in their reports on pulmonary cases they jump at too many conclusions that they have not very definitely proved.

One of the institutions in this country where heliotherapy is used is the Adam Memorial Hospital, which is conducted by the Health Department of the City of Buffalo. They have there a hospital with, I think, about four hundred beds exclusively devoted to surgical tuberculosis. When I was up there several years ago I asked the physician in charge whether they had treated any pulmonary tuberculosis, and he said, no, they had not. I said, "But you have four or five hundred cases of surgical tuberculosis here, and it is impossible to have that many cases of surgical tuberculosis without having some pulmonary." Then I asked him whether they had seen any bad results in treating pre-pulmonary cases, and he said he didn't know of any.

We have tried it out, not as extensively with the adults as with children, in fifty or more cases of active adult tuberculosis, and although we have to use a certain amount of caution at the beginning of the exposure to avoid temperature rising, we have not seen the hemorrhages that the Swiss say you will see, and we have not seen any results that were serious. The worst has been a temporary rise of temperature, which can be controlled if you regulate the time of exposure and the routine of exposure. We have usually begun by giving them a blanket and sending them to the yard. They like to lie on the ground best. We spread their blankets on the grass and let them lie on these blankets. If it is damp we have some tables that we have on horses out in the yard and the children put their blankets on these and lie on them. We put the child on his back first, spread the blanket over all his body except the feet and legs. The nurse keeps him there for about fifteen minutes, and at a signal they all flop over and expose their backs. After they have been exposed in this way for several days, we extend the time of exposure to twenty or twenty-five minutes. We expose the feet and legs as high as the knee for fifteen minutes, then expose as high as the thigh for fifteen minutes, which gives an exposure of thirty minutes below the knee and fifteen above. After the legs have been exposed we expose the arms, and then gradually expose the body until by the end of the third week we are exposing the whole body, front and back.

It is important to avoid sunburn, and you have to have a nurse of considerable experience to do that. It has been found that different people react differently to the rays of the sun; some can stand it for only five minutes, and some can stand half an hour's exposure without burning. If you will make it a point to get a nice uniform coat of tan, that is what apparently gives the best results. You want to avoid sunburn, because when a patient is once sunburned you will never get him tanned satisfactorily.

Dr. Cohen mentioned peritonitis. We have, fortunately or unfortunately, had practically no cases of peritonitis among our children. Probably we have not had them because we do not treat surgical tuberculosis. At the Adam Memorial they claim 100 per cent of cures. If so, they obtain excellent results.

RECENT MODIFICATIONS OF PENNSYLVANIA'S QUARANTINE LAWS*

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Until the session of the last Legislature, the details of quarantine management in Pennsylvania had been inflexibly set forth in the statutes of this state. The law prescribed this or required that, and much that it required had for some time been looked upon as obsolete. The placing in the hands of the Secretary of Health and his Advisory Health Board full authority to make and, on occasion, to revise regulations for the control of the communicable diseases, offered relief from ironclad provisions alterable only by the Legislature at minimum intervals of two years. The desired authority was secured in a new law and advantage already has been taken of it to remodel former practices, especially with respect to the so-called minor infectious diseases.

Quarantine, on the whole, is an irksome curtailment of personal liberty, which is submitted to more or less graciously in accordance with the training, intelligence and good citizenship of the individuals upon whom it is enforced. Factors other than that of restraint, which we need not stop to discuss, but which will occur to all of you, have contributed to make it in the minds of many of our people a thing to be evaded if at all possible.

Regulations which are consistent and rational, in that they afford the quarantined the greatest latitude compatible with community protection are most likely to receive public acceptance and support.

Definite etiologic knowledge of each of the communicable diseases offers the only true basis for ideal quarantine regulations, in that absolute knowledge of the causative organism, its habitat, viability in unfavorable environment, manner of transmission, at once indicates probable avenues along which infection may reach others, and which are to be stopped. Unfortunately, such complete information is largely lacking, at least for the communicable diseases with which we have to deal. Formulation of our quarantine rules must therefore rest upon what partial information is available—this largely derived from experience and observation. While valuable and workable, this has not the exactitude so much to be desired, and its deficiencies of necessity will be reflected in the regulations.

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†Chief, Bureau of Communicable Diseases, Pennsylvania Department of Health.

Diphtheria, typhoid fever, smallpox, tuberculosis, cerebrospinal meningitis, and a few other less common conditions fall readily into that class with respect to which it is possible to formulate rules with confidence.

Scarlet fever very definitely falls into the second class, and the answer to what should be done with it is further involved with the discussion of whether or not the virus retains its activity for long periods of time outside the human body, and whether or not the mild case should be handled less stringently than the severe.

Whooping cough, measles, German measles, chicken pox and mumps have presented a problem variously solved by individual departments of health. Not only are these infections looked upon as trivial by the laity and until more or less recently perhaps by the medical profession, but the health officer himself must acknowledge that quarantine *per se,* in all likelihood, cannot limit their occurrence to any appreciable extent. The health officer, loth to confess his helplessness, and mindful that measles and whooping cough are frequently serious diseases which should not be ignored, seeks a middle ground which may be expected to accomplish at least something in the direction of control.

The Department of Health has found this middle ground in the doctrine that animate and not inanimate objects, except when freshly contaminated or under unusual circumstances, are the sources of infection actually to be feared; or, in other words, that infection is directly from person to person, especially with respect to the diseases under consideration.

Accordingly, quarantine restraint has been placed upon the patient and the nonimmune children in the household only. For the protection of those who might unwittingly enter, a warning placard forbids entrance except to those of the household. Immune children may attend school from the quarantined home and the adult members of the family may go and come at will upon their necessary errands. Further, touching whooping cough, the patient, after the third week, may be taken abroad by a responsible adult.

In formulating these regulations for measles, German measles, mumps, whooping cough and chicken pox, the Pennsylvania Department of Health considers itself particularly happy in having the concurrence of the State Medical Society in its views concerning them. Our questionnaire of last spring found a number of the county societies adjourned until fall. Of thirty replies, twenty-seven approved the handling of these diseases in the manner since established by action of the Secretary of Health and his Advisory Health Board.

PREVENTION OF DIPHTHERIA*

J. BRUCE McCREARY, M.D.
HARRISBURG, PA.

At the annual meeting of this Society for 1922, the State Department of Health reported briefly the result of a partial study of the consistently high diphtheria incidence of the state, as well as the consistently high death rate of this disease, which for fifteen years has been around 10%. Further study throughout the year confirms the opinion then expressed, that the three potent causes of lack of control of diphtheria are:

1. Failure on the part of parents and others in charge of children to secure prompt medical attention.

2. Delay on the part of physicians in giving sufficiently large doses of antitoxin promptly as a curative agent.

3. The great number of susceptible children of from one to six years of age.

Under the former administration, an active campaign looking to the control of these factors had been under way for a year. Dr. Miner, the present Secretary of Health, heartily endorsed this program, and backed by the State Medical Society, through its Committee on Public Relations, increased the efforts and enlarged the personnel, giving special attention to this most important piece of public health work. Publicity, through the lay press, public addresses to civic bodies, teachers' institutes and many other channels, was given to the long delay by parents in securing medical aid and the value of antitoxin as a curative agent and as a temporary immunizing agent to diphtheria contacts. Through demonstrations and talks to groups of physicians and medical societies, the profession was given facts bearing on the relative value of antitoxin on the first, second and third days, or later in the disease. Especial emphasis was placed on the value of toxin-antitoxin as a permanent immunizing agent. This procedure is long past the experimental stage and its value fully demonstrated.

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*Read before the General Meeting of the Medical Society of the State of Pennsylvania, October 4, 1923.

Up to the first of June, an effort was made to immunize as many children of school age as possible. The Department furnished free toxin-antitoxin and conducted a wide campaign through its Nursing Division, county medical directors and county organizations, assisted and backed by the county medical societies. Owing to a lack of funds in the present appropriation to the Department, this free distribution to children of school age necessarily had to be discontinued on that date.

Up to the first of June, there had been distributed throughout the state, exclusive of Philadelphia and Pittsburgh, 127,058 ampules of toxin-antitoxin. This provided for the immunization of 42,519 children. So far as we are able to gather, there was but little wastage.

Under the present administration, there has been created the Bureau of Child Health, which comprises the three groups of Pre-school, School and Dental Hygiene Division.

Dr. Miner, as Secretary of Health, has the control and distribution of a Federal Fund allotted to him under the Sheppard-Towner Act. By setting aside a certain amount of this fund, which is matched by an equal amount of state funds, he is enabled to continue our program of permanent immunization. However, since this fund may only be expended on children of preschool age, the free distribution of toxin-antitoxin mixture may only be to children of this group. We are endeavoring to carry on this work through our public health centers, where full information may be secured.

Parental consent blanks will be furnished to physicians upon application to any of the centers, or where no health center is near at hand, direct application may be made to the Division of Supplies, State Department of Health. The age of the child must appear on the blank form. Where physicians prefer to administer the toxin-antitoxin in private practice, they may do so. Upon the return of the signed blanks to the Department, one ampule of toxin-antitoxin for each blank will be immediately returned to the physician or health center and the second and third doses will be forwarded at the proper intervals without further order. A careful record is kept in the Division of Supplies, so that the toxin-antitoxin will be received at the proper time.

The reasons for this method of distribution are to avoid wastage and insure fresh mixture. It is hoped that all physicians will avail themselves of this opportunity and help to establish the procedure as a universal practice.

Until the number of susceptible children is reduced, the incidence of diphtheria will remain the same; and there is but little hope that the death rate can be reduced so long as there is the long delay by parents in securing medical aid.

CHILD WELFARE IN RELATION TO CHILD HEALTH*

ELLEN C. POTTER, M.D.

HARRISBURG, PA.

To those of us who received our medical education twenty years and more ago, the child health movement of the last ten years has meant in large measure merely the examination of children of all ages for physical defects and then subsequent correction. We first had our attention definitely called to the school child, later to the infant, still later to the preschool child and also to the mother, the child bearer.

Honest confession from some of us might reveal the fact that we resented the intrusion of some physician other than ourselves, such as the "school doctor" or the baby health doctor, into the families with which we were connected, and on the other hand there were some of us who "did not want to be bothered" to consider the child whom we blandly said "had nothing the matter with it." We would work night and day for the sick child, but it seemed a waste of time to examine the child who suffered from no obvious complaint.

The tremendous piece of educational work done by the Federal Childrens' Bureau, supplemented by the findings of our army draft boards and the accumulating statistics of our school medical inspection and baby health centers, has served to shake most of us fully awake to the fact that one does not have to be acutely ill to have "something the matter," and that the only hope for a healthy and efficient adult population lies in careful conservation of the children of this and succeeding generations.

I am glad to realize that the way is paved for me in addressing you on the relationship of the social welfare of children to health by the very able paper read before you last year by Dr. Horace H. Jenks of the Associated Medical Clinic of Philadelphia, which serves several agencies that deal exclusively with the dependent and delinquent child.

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*Read before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 2, 1923.

He brings out very clearly the great handicaps under which these children suffer—malnutrition as evidenced by subnormal weight in 55.2% of the children examined, and of these 22.1% who were below the danger line; while of the group studied, numbering more than one thousand, 87.8% suffered from one or more physical defects.

These children were frankly in the dependent class, with parents or other family connections failing in their proper task of providing the simple necessities of life. Very incomplete statistics which the Department of Welfare has assembled show that there are at least 50,000 dependent children throughout the state in the care of directors of the poor, of institutions and agencies, both public and private, and who it is fair to assume would show similar percentages of physical disability.

If the problem were limited to this goodly company of children, it would be sufficiently large to challenge the skill of the physicians of Pennsylvania and their allies, the public health nurses, but there is, as we all know, a vastly larger group of children to be found in our public schools and elsewhere, whose parents or other relatives have not yet given up the struggle and who are living just above the level of those actually submerged; not far enough above that level, however, to assure to the child proper housing, food, clothing and a chance for happiness and self expression. Such conditions are bound to insure to the child *more* than the average share of physical handicaps, which in turn may ultimately put him in the dependent class.

The records of the Department of Public Instruction of the state show that the school census of Pennsylvania for 1921-22 was 1,844,854. A rough estimate of the preschool group would warrant the safe conclusion that we have, including children in institutions, approximately 2,000,000 whose future success in life is to depend in large measure upon the health foundations which are laid for them to-day, children who, failing of success, are ultimately to become a charge upon the taxpayer, a liability instead of an asset to the state.

As an index of the physical status of these children, a glance at the statistics of school medical inspection in the state will be worth while.

The State Department of Health controls these examinations in the fourth class school districts, that is, in rural communities. Their figures for the last year available show 529,000+ children examined in 1922 with 370,000+ (or 69%) found to be suffering from physical defects of a greater or less degree of severity. (Incidentally I may say that they found among the group examined more than 60,000 who were proper candidates for special class instruction.) This gives us at least a suggestive measure of the physical well-being of the rural child.

If, on the other hand, we take the statistics of Philadelphia for 1922, there were 230,000+ examined and 156,000+ who showed physical defect, or 67% physically handicapped, a slightly better showing than that of the rural child. The frankly dependent child shows, according to these figures, approximately a 20% greater physical handicap than does the mixed group of children at large.

These percentages of the rural and city schools are, of course, diluted (or lowered), as far as the child on the verge of dependency is concerned, by the children from well-to-do families who it is reasonable to suppose show a smaller percentage of defect; and this makes it all the more apparent that the social welfare of children in relation to their health needs thorough study, and that the physician, the social worker and the public health nurse must make a very definite effort to arrive at a common understanding of the problem, each recognizing the preëminence of the other in certain fields of study (research) and treatment, and all of them uniting to harmonize a program for child welfare in the broadest sense.

If we assume that a child welfare or child health program begins and ends with the child, we shall not secure results.

Many of us, as physicians, have looked upon the child welfare movement as a health movement exclusively, relating only to children themselves, and we have failed to grasp our responsibilities and opportunities in the social welfare field. More than that, some of us have resented the advent of the social worker in the field of child hygiene.

Perhaps you recall some of the rather violent things that were said when the Federal Childrens' Bureau, under the leadership of Julia C. Lathrop, began its investigations and developed a program in the child hygiene field. "What does she know about child hygiene? She isn't a doctor!" said the reactionaries in the profession. The social workers returned the compliment at the time a physician was called to be the Commissioner of Welfare and he in turn called another physician to direct the Bureau of Children of that Department, and the cry was: "What does she know about the social welfare of children? She hasn't had training in social work."

As a matter of fact, training in the science and art of medicine is a wonderful preparation for work in the social field, and training in social work lays a substantial foundation for the practice of medicine and of nursing in the fullest sense.

The state of Pennsylvania has groped forward for years towards the goal of the social welfare of children, without any definite plan, but under the present administration, which has provided specifically under the law for coöperation among the various departments, we are beginning to sense a solidarity of purpose and we have the hope that through the recently authorized Childrens' Code Commission, we may be able to formulate a coördinated program which will assure to all children the maximum of well-being.

Let me review for a moment the state undertakings which directly or indirectly provide for the welfare of the child.

The Department of Health, through its Division of Child Health, is working out, in coöperation with local communities, the problems of maternal and infant mortality, the problems of the preschool child, school medical inspection and follow-up, and dental hygiene, and as always its big program for the control of contagious disease is moving forward. So the foundations of child health are being laid.

The Department of Public Instruction, through its program of teacher training, an improved curriculum including health education, enforcement of school attendance, improved school buildings, and special education for the handicapped child, is laying the foundation for an intelligent and economically successful citizenry.

The Department of Labor and Industry, while not yet armed with adequate legislation for the protection of the woman and child in industry, is nevertheless making a contribution indirectly to their welfare through their safety campaign and the rehabilitation of the cripple, saving the wage earner to the family. The child labor laws fall short of what might be expected of them, because of the lack of *local* enforcement due to the apathy of the local communities.

The Workman's Compensation Board in its operation minimizes the possibility of dependency for the family as the result of industrial accidents and disease.

The Mothers' Assistance Fund, now lodged in the Department of Welfare, assures to a goodly number of otherwise dependent children care in the home of the mother under reasonably satisfactory conditions.

The Juvenile Court Act, while making admirable provision for the protection of juvenile delinquents is, however, not serving their interests to the fullest extent because of inadequate interpretation and enforcement.*

The most recently created department of state government, the Department of Welfare, makes its contribution through the Bureau of Children in its efforts to protect the interests of the dependent and delinquent child, whether in the care of public or private institutions or agencies, through its Bureau of Mental Health which is establishing mental clinics in every county for the service of children as well as adults, and through its Bureau of Assistance which coöperates in dispensing the state's generous appropriations to private charity for the care of children.

Shall we as physicians, be making our full contribution to the welfare of the children of the state if we limit our activities to the physical examination and correction of the defects of the children who are brought to us?

I think not. We shall be indispensable in the prevention of disease and the correction of defects because of our technical training; but as moulders of public opinion for a sound social and economic policy for the state and local government, and for individual families, we shall make our greatest contribution.

It is essential that we should get back of existing conditions and grapple with causes of ill health and physical handicaps of the child.

We have come to the place where we recognize the influence of the mother upon the health of her child, and by applying our knowledge, we have reduced our infant mortality rate (which is the index of the sense of social responsibility of a community for the health of its children). We have reduced it for the state from 100 to 85 in the last four years, but in spite of our reduction of the rate as a whole, we have made little impression on the rate for infants under one month. To our sorrow be it recorded that our maternal mortality which stood at 6.4 in 1915, stands 6.8 for 1921.

Back of the failure to reduce mortality of infants under one month and back of that failure to reduce maternal mortality stalks the fact that the father and mother between them have failed, he in his earning power and she in her spending, to keep the family at the place where adequate shelter, food, clothing, medical attention and education can be assured. Still further back of that lies the more serious fact that the government, the workers and the employers have not yet in a spirit of fairness dug down to the roots of the evil of dependency and adjusted working conditions, production and wages to the needs of family life; and that the father and mother who head the family are poorly equipped to handle the problems of family finances intelligently.

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*In addition, at this last session of the Legislature provision was made through the combined activities of the Rotary Clubs and the Department of Welfare for adequate care for the crippled child, the power being vested in the Juvenile Courts to require this from the counties.

Julia Lathrop, at the National Conference of Social Work in 1923, said that our next objective must be the "abolition of poverty" with its coincident dependency.

It seems to me possible that we may hasten the approach of this social millennium, when dependency shall "be abolished," through our child health stations. We are agreed that we can accomplish more through the mother, that is, provided the mother is intelligent and teachable. This means that we must be dealing with a woman who is mentally alert. Contact with other people and other minds is essential if her own mind is to be receptive to new ideas and if she is to have the courage to act upon them. The man of the family has his outside contacts with other men on the job, but the average woman who comes to us at our baby health stations has little if any contact outside of her own home; or if she has, it is with other women with the same unsolved problems of rent and food and childbearing and undisciplined children, so that there is nothing to give her a mental stimulus, new ideas and a sense of belonging to a social group. The visit to the child health station is something, but it is not enough if it is conducted only as a health center for the child. As an adjunct to it can we not make it a social health center for the mother; a place in which she makes social contacts with other women over a cup of tea and in the friendly atmosphere created by the public health nurse, the social worker or an auxiliary committee of lay women, is given the opportunity to develop new ideas, new interests and, therefore, a more receptive mind for health teaching? This possibility of developing social relationships is one of the advantages of locating a baby health center in a settlement house and not in a hospital.†

Can we not undertake to mould public opinion for improved housing in our communities, since we recognize, as others do not, the serious menace to the health, both physical and mental and moral, of the child whose early years are spent in over-crowded, insanitary surroundings?

Certain studies made by the Children's Bureau show in one New England City (Waterbury) an infant mortality rate in rear houses of 172 as against a rate of 120.6 in houses on the street. In still another New England town (Manchester, N. H.) a housing study shows an infant mortality rate of 123.3 when the family averages less than one to a room, but rising to a rate of 261.7 when the average is two but less than three to a room.

We cannot stand by as physicians and let causes of disease and death, which are so obvious, continue when an educated public opinion which we must lead will bring them to an end.‡

Granting that much time will elapse before we can realize the ideals of decent housing, better housekeeping, economic management in the home, etc., can we not emphasize the extension of our public health nursing and social service in the home through private philanthropy and adequate appropriations for public health and public welfare activities? Not the least of the help that can be given in the home which is on the verge of an economic breakdown, is in the organization of a family budget, without which no family can keep on a basis of sound economic independence. This is one of the features of the work under the Mothers' Assistance Fund, and should be extended in our child health work. We have an obligation to the woman in industry, particularly the *mother* in industry, whose child's chance of survival is nearly two-thirds less than is the chance of the child whose mother is at home to care for it. One detailed study gives us the tragic figures of 312.9 deaths per thousand of infants whose mothers work outside the home against a rate of 122 in a similar group whose mothers were not so employed.

In addition, have we not a responsibility for insuring to the child the things which his home lacks, conspicuous among these lacks being healthful recreation? Without it there cannot be physical and mental health for the child. No community can afford not to provide a recreational program; and yet it is unusual for us to find anything which is adequate in this field, and the taxpayer too often looks upon it as a "frill" which can easily be dispensed with. We, as physicians, must lend the weight of our influence to promote recognition of this community and individual need. Already the state law permits counties to provide, out of the tax rates, for recreational activities, and we should help to make the law a living thing and not a dead letter.

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†The effect of intelligently conducted baby health work is most clearly shown by the study made of Pittsburgh by the Federal Children's Bureau in 1920. For the city as a whole the rate was 110.7. In the 3d ward, which is densely populated and has a large foreign element, it was but 94, while in the wards immediately adjacent and of the same character, the rate was 147. The 3d ward, with its low rate, had within its boundaries the only well baby clinic in Pittsburgh in 1920, located in the Irene Kaufmann Settlement, and in addition had behind it 19 years of nursing service supplied by the Settlement. These facts are not without their significance.

‡On September 26th the State Department of Health, through its Advisory Board, whose regulations have the authority of law, promulgated a housing code which every medical man and woman should seek to make effective. Unfortunately it relates only to tenements, lodging and boarding houses, but since these are the most vulnerable spots in the bad housing in every city, borough and township, much progress can be made if the medical profession educates public opinion to the need of enforcement.

It is to be regretted that "enforcement" sometimes means interference with the selfish interests of some of "the best people" who are the owners of property they never see and are sometimes more concerned about the return on the investment than they are about the health and morals of their fellows.

Properly conducted school lunches, nursery schools and day nurseries are all social agencies supplementary to the home, which we may need to develop in our communities if we are really intent upon a complete child welfare program, which is essential if child health is to be preserved. Especially is this necessary, if contrary to our best judgment, the mother goes out to work.

Last, but by no means least, we have an obligation to protect the child from the devastating effects of labor before he is able to endure it. The laws of the state are not drastic, we could wish that they were more so, but such as they are, they are not adequately enforced because of local inertia, and we, as those responsible for the health of children, may well rouse public opinion on this point. This is particularly urgent since the Supreme Court declared the Federal Child Labor Law unconstitutional, for since that time there has been a general increase of 57% in children entering employment, according to Grace Abbott of the Children's Bureau. Precise figures are not available for Pennsylvania.

It is to be hoped that the medical student of to-day will be taught to correlate much more definitely than formerly, social disorders with disease. It is certainly true that the student of public health to-day cannot escape a recognition of the social forces which make for disease and which must be controlled if any health program is to be assured. We as physicians, whether we will or no, are leaders of public opinion in our community. If we but recognize that we are dealing not only with disease germs, but with social forces capable of control on behalf of child health, and if we arouse public opinion to make that control effective, we shall have made a worthy contribution to the child welfare movement which is the foundation for child health.

DISCUSSION

Dr. Howard C. Carpenter (Philadelphia, Pa.): It is an honor to have the privilege of opening the discussion of Secretary Potter's paper. I think the members of this Section ought to feel very proud that we have as the Secretary of Public Welfare of this commonwealth a physician and one who has been particularly interested in pediatrics.

It is most fitting that the Secretary of Public Welfare should be a physician, as a medical training is the best equipment for social work. One cannot help being impressed on hearing this paper, with the great promise which the future holds for the health and welfare of the children of our state. The interrelationship between health and social problems is most intimate. One is dependent upon the other, but I believe that the most practical approach to the solution of our social problems is through and along health lines. If we had larger budgets requested for health promotion we could probably dispense with some of the big appropriations which are now given to charitable institutions and agencies. I believe that all charitable and family relief agencies should require very definitely a health examination of every member of every family they have under their care. There should be larger budgets for health work in all organizations having to do with dependent children—that is, all children who in any way receive support from the state should have careful medical examinations, not only before they are accepted for admission to an institution, but repeated examinations at regular intervals. Too frequently, I think, we hear claims of effective medical service which are really not borne out by facts. The health of dependent children cannot be conserved through any lax medical program. The failure of these children to develop into healthy adults due to lack of adequate medical attention is largely due to misproportionment of the funds of such agencies—that is, an insufficient appropriation towards health work.

The average community in Pennsylvania to-day lacks sufficient preventive medical service. It seems to me that the solution of this can best be accomplished by the organization of health centers in every small community, where supposedly well children can be brought not only for a thorough physical examination but also for an equally thorough mental examination. The very large percentage of children who have some variety of mental defect, I think is not sufficiently appreciated. It is estimated that seventy per cent of young children of preschool age have some type of defect, either physical or mental. The great frequency of malnutrition in childhood, due to ignorance and poverty, must be prevented.

Dr. Howard C. Frontz (Huntingdon, Pa.): I should just like to endorse what Dr. Potter has said on this important subject and say a few words in respect to looking after the babies and the preschool children.

You know it is more difficult to do health work of this sort in the country, where the people are not accustomed to dispensaries, hospitals and clinics, than it is in the cities, where it is possible to go to a dispensary or hospital with almost the first symptom they have.

We have introduced in Huntingdon a well baby clinic. We had some babies coming to the clinics who were ill. We could not divorce that feature at once, but we have worked away until we now have an established well baby clinic. One of the important things for a baby clinic in the country is scales that will weigh by ounces. Mothers will bring their babies to the health center and will go by a number of scales on the way down town. We give them the ounce weight and then have opportunity to make helpful suggestions to the mother.

We recently started a prenatal clinic. We are going ahead slowly; we have a few come in, and they are looked after regularly at the clinic, and at the proper time these women are sent to the hospital for delivery. This service is helping some worthy women who would otherwise be neglected. A number of preschool children are seen at the clinic, and defects such as tonsils, adenoids and some others are noted and arrangements are made with the hospital for their correction. The work is growing.

Another point that Dr. Potter touched on was in regard to the work of the Mothers' Assistance Boards. The children under their care are being examined. We are examining them in our clinic and often find defects. We then make it easy for them to be sent to our hospitals for correction.

The whole problem, after all, resolves itself into an education of these people along health lines, and then being willing to extend to them the proper help.

Dr. Roy S. Minerd (Erie, Pa.): I should like to ask a question with regard to the statement that Dr. Potter made concerning the location of these health stations at social service centers instead of hospitals.

We have five health stations in our city and some of them are doing good work. One of them, however, which one would think would be the most enthusiastically attended, is the poorest clinic of all, and that is one we call the "Neighborhood House," which is really the slum district if there is one in Erie. We have done everything we can think of to get these mothers to bring their babies to the clinics; we even have the visiting nurses go after them in their cars to try to bring these kiddies for us to examine, but we are not succeeding. I should begin to think I was the "Jonah" if it was the only clinic I looked after; but in the other clinics we are having good attendance, sometimes as many as twenty babies in an afternoon. In this one clinic where the people are very illiterate and ignorant, very low class people, we are not succeeding.

I should like to ask those who are in charge of clinics in other localities where our fault is, and what they are doing. I should like also to send in an S. O. S. to Dr. Potter for some help.

Dr. Mary A. Naylor (Pittsburgh, Pa.): I have been waiting for my chief, Dr. Burns, to say something in regard to taking care of children of the preschool age, but he is such a retiring man. I cannot let my former instructor, Dr. Potter, get by without saying something.

In the first place, September 4, 1923, Dr. Burns issued orders to school medical examiners to examine all kindergarten children. The men held their mouths open and so did the women. They said, "We don't know how to get to them; the kindergarten children come in the morning and we are scheduled to do this work in the afternoon; how could we get them?" We all thought it would be an impossible task, but these were the facts: The kindergarten teacher gave us her support, and in asking the children to come she said, "You can bring your mothers with you if you wish." So the mothers came along and we had fifteen doubtful mothers and fifteen children to examine the first day. This day's work was not so easy, but the next day we not only had the mothers and children five years old, but we had the babies one to four years old. After we would finish with the five-year-old, the mother would want to know what was the matter with the baby, or if it was all right.

I have been in this work for over twelve years. This year I feel that we are closer to the work than we have ever been before because we have gotten in touch with the mother. She understands our work, she understands that we are trying to keep the well child well, and to help the sick child to be better.

Dr. Potter spoke about the low mortality in a ward where a baby clinic was held, when the mortality was high in all the other wards. Dr. Benz, Chief of the Bureau of Child Welfare, would know about that. I have two baby clinics; I cannot tell you the wards, but I have one that is at the Heinz Community House, and I am positive our death rate has not been as high as it had been before we started fourteen years ago. Dr. Benz would know that; I do not keep track of the statistics; but I am sure that there is more than one ward in Pittsburgh in which the death rate is lower because of the no less than fifteen permanent baby clinics.

Dr. Potter (in closing): I know the work in Erie very well, and know how remarkably it has grown; but what the particular difficulty is in that particular station the Lord only knows, and I suspect it will take some time for mere humans to work out the cause.

I do wish that you really could get the sense of what a baby health clinic means to a mother, particularly back in the country and small town. We have a station up in Warren. It is run by a "corking" good lay committee of women with one nurse. Women who are poor and women who are in better circumstances bring their children, and one little incident I think will show you what that social relationship may mean to a young mother in a strange community.

There was a young woman who came to town with her husband. He had a good position. She became pregnant; she heard about this baby health station and went there for advice. A baby was later safely delivered. She came back with it and it was given the necessary care. Then her husband secured a better position out of town, and as she was about to go she came over to the leader of the volunteers who was running the clinic to say good-bye. "Do you mind if I kiss you good-bye?" she said. The chairwoman said, "Why, no." And then the little mother said, "You know this has been practically the only bit of social intercourse that I have had since I have been here in this town." It meant all the world to her, and it had profound influence undoubtedly on her well-being and that of her child. If we can make our social health stations the living things they ought to be, we shall be doing much more than just keeping children well.

CYSTINURIA AND CYSTIN CALCULI*

CASE REPORT

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Cystinuria is an unusual disturbance of the amino acid metabolism, in which cystin appears in the urine. Normally the "protein molecule is broken down into its ultimate building stones, the amino acids, by the digestive enzymes of the intestinal tract. These amino acids (of which cystin is one) are absorbed into the blood, by which they are carried to the various organs and tissues, which sift out the amino acids and use those of them which they require for the reconstruction of their broken down protein. The amino acids not required for the process, along with those which may be liberated in the tissues themselves by disintegration of tissue protein, are then split into two portions, one represented by ammonia and the other by the remainder of the amino acid molecule. The former is excreted as urea and the latter is oxidized to produce energy."

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*Read before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 2, 1923.

"Owing to some defect of amino acid metabolism the cystinuric is unable to avail himself in the normal way of cystin and in part it is excreted in the urine." (Neuberg.) Its exact etiology is not clearly understood. Modern investigators believe that the metabolism of cystinurics is normal, the anomaly affecting only the breaking up of cystin. It shows a rather remarkable familial tendency, a fact which has been commented upon by various investigators. Either sex may be affected, the male probably more frequently than the female, and in the absence of stone formation it usually pursues a symptomless course. Unless calculi develop the affection is found only accidentally. It may temporarily or gradually disappear and is not incompatible with longevity. In the urine cystin appears as six-sided rhombic plates. They are soluble in ammonia and can be precipitated by the addition of acetic acid.

The disease is rather infrequent, less than two hundred reported cases occurring in the literature, although it has been recognized since the first case report by Wollaston in 1810. Modern interest in cystinuria dates from the study made by von Bauman and Udransky in 1889. In their patient they succeeded in isolating from the urine of a cystinuric, putrescin and cadaverin, the feces of the individual showing the same diamins. They concluded that the disturbance is due to intestinal putrefaction, the two diamins preventing the further oxidation of cystin by uniting with it in loose combination, which again decomposes after passing through the kidney. (Webster.) This view is no longer accepted. Stadthagen and Brieger advanced the theory that the disease is an infectious one. This too has been objected to on the ground that the disturbance has been known to last a lifetime. Marowsky and Ebstein considered the liver to be the source of cystin. Moreigne and Simon believe that cystinuria is due to defective oxidation of protein. Link in an exhaustive article concludes that "the anomalous metabolism of proteins based on incomplete oxidation is the most plausible cause." Wells believes that cystin is formed in the tissues from the protein molecule, which fails to be oxidized owing to a defect in metabolism. Neuberg suggested that cystin thrown into the urine, and especially the cystin contained in stones, is of a different structure than that of the amino acids. Abderhalden has apparently disproved this conception. Garrod believes that cystinuria is due to an arrest of metabolism.

Clinically little can be done to influence the amino acid metabolism. The reduction of protein intake, increase of fluids, and the institution of alkalies to keep the urine alkaline, thus rendering the cystin soluble, have been advocated. Owing to the frequent occurrence of stones in cystinurics, frequent x-ray examination is of value.

CASE REPORT

Robert W., age 3 years, the younger of two children, was admitted to the Western Pennsylvania Hospital, to the service of Dr. Acheson Stewart, with a diagnosis of a vesicle calculus. X-ray taken before operation disclosed a stone in the bladder and one in the right and left kidney. Examination of the urine was negative except for a few pus cells. A suprapubic midline incision was made and a stone the size of a pigeon egg was removed from the bladder. Examination of the stone was made and reported as a cystin calculus.

The boy, owing to his debilitated condition, was sent home with instruction that he be returned later for the removal of the stone in his left kidney. He was readmitted one year later. Since his former operation he had been sent to the country and had gained in weight, the symptoms of frequency and nervousness which had been complained of prior to his former operation had practically disappeared. X-ray disclosed stones in the right and left kidney. Urine at this time showed cystin crystals and a large number of white blood cells. Under general anesthesia, a branching stone was removed from left kidney. Three days later cystin could not be demonstrated in the urine. He made an uneventful recovery and was sent home. He was brought in again one month later and the stone in his right kidney was removed. X-ray taken before his discharge was negative for stone. Cystin could not be demonstrated in the urine. Examination of the kidney stones proved them to be of pure cystin. At last report the child was in good physical condition.

It is rather interesting to note that the elder brother of this child died following operation for kidney stone at age of two years. Examination of the urine of the mother and father for cystin gave negative results. Examination was also made of the urine of mother and father on mother's side, with negative results.

This case is reported because of the rarity of the condition and also because of the surgical problem which it presented.

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DISCUSSION

Dr. Roy R. Snowden (Pittsburgh, Pa.): This paper of Dr. Flood's is so carefully prepared I think he is to be congratulated on the thoroughness of his study of this case.

The condition of cystinuria may be a great deal more common than we recognize, because if there is no deposit of stones in the genito-urinary tract, apparently no symptoms arise. However, it is quite possible that there are other results that develop by reason of the large amount of cystin that may be in the urine, and it may be in the future, as possibly more extensive examination of the urine may show, or when we understand better just what cystinuria is, that we will appreciate cystinuria a great deal more than we do at present. It is apparently a disturbance of metabolism, and in view of the large number of clinical conditions which we are unable to explain, such as hypertension, chronic nephritis, etc., there might be here some factor which in the future will be looked for a great deal more earnestly. I myself feel like congratulating Dr. Flood upon the very thorough way in which he has studied this case.

THE SPECIFICITY AND SENSITIVENESS OF THE AUTHOR'S NEW COMPLEMENT FIXATION TEST FOR SYPHILIS*

JOHN A. KOLMER, M.D.†
PHILADELPHIA, PA.

Doubtless all will agree that the two most important questions concerning the complement fixation or any other serological test for syphilis are *specificity* and *sensitiveness*. All other considerations should be of secondary importance and especially simplicity and economy of time and materials. When one stops to consider that syphilis is a widespread disease of great economic importance involving men, women and children of all classes, responsible for a heavy infant mortality and a large percentage of chronic diseases of adults, and that in many cases the diagnosis is greatly aided and indeed, may be only possible by the complement fixation test, the questions of accuracy and sensitiveness must be conceded as the prime factors of importance.

I believe it is the duty and one of the heaviest responsibilities of physicians practicing laboratory medicine and diagnosis, to employ a method insuring the highest degree of reliability not only because the diagnosis of syphilis frequently depends largely and sometimes solely upon the complement fixation test but likewise because the treatment of this disease is usually controlled by the results of these reactions, and no one can deny that for this purpose the test should yield a reaction as sensitive as is consistent with specificity in order to avoid the regrettable error of undertreating the disease.

In my opinion the Wassermann reaction is one of the most valuable tests in medical science. Unfortunately, however, it is a complicated method for the inexperienced although perfectly simple for the trained and experienced immunologist. Largely as the result of its abuse in the hands of insufficiently trained workers inside and outside of the medical profession and especially as a result of numerous modifications aiming to evolve a shorter and simpler method, the true value of the complement fixation reaction in syphilis is greatly underrated by many physicians. However, the practitioner cannot be blamed for this attitude since he is able to judge only by results, possesses little or no time for mastering the principles, and simply fails to understand why positive reactions are observed with the sera of nonsyphilitic persons and especially why different laboratories will return reports with portions of the same blood differing as widely as night from day. It is the duty of serologists to guard their work with the utmost care; to evolve and employ a method of the greatest technical accuracy and then to reëducate patiently and continually the practitioners of medicine on the interpretation and true value of the complement fixation reaction. It ought not to be necessary to apologize or hedge on the results of our work and we ought not to employ a method in which we have no confidence in the weakly positive reactions. As I hope to point out later serologists cannot hope ever to evolve a method capable of detecting all cases of syphilis; if *Spirocheta pallida* is capable of lying so dormant in the tissues that even the usual admiring circle of lymphocytes and plasma cells is absent, there is no hope of being able to detect in the test tube sufficient amounts of reagin when this is practically absent from the plasma. But in that large group of cases containing small amounts of reagin in the blood, the very group in which our complement fixation test should be of most value, the reactions are apt to be weak and we should be just as sure of these as with more active cases of syphilis yielding stronger reactions.

There is not any more merit in securing positive reactions in active cases of syphilis than in making an x-ray picture of a long bone that can be bent double, for a fracture; our aim should be to provide the practitioner with a method for the accurate diagnosis of syphilis when such is not possible or doubtful by clinical means.

Six years ago my associates and I set out to determine more accurately the sources of error in the Wassermann reaction hoping that a minute study of every step and phase of the test would yield such information as to enable us to build up gradually a technic of acceptable accuracy and sensitiveness. To know a source of error intimately, its nature and mechanism, usually permits one to adopt adequate and acceptable means for preventing its occurrence and we hope to obtain accurate information of this kind on all the important and minor steps and phases of the complement fixation test in syphilis. After completing a study of this kind a new method was built up,[1] which we have found much superior to both the original Wassermann reaction and a modification of it employing three antigens, which I described in 1915 and which has since come into widespread use. We have not called this new method a standardized test as this designation must be earned and granted by the consent of the majority, but we have found it a method yielding specific and very sensitive reactions and trust that it at least merits a fair and sufficiently extensive trial alongside of other methods.

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*Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 2, 1923.

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THE SPECIFICITY OF THE NEW COMPLEMENT FIXATION TEST

Probably the most important single factor of the complement fixation test for syphilis is specificity. The damage that may be done by a falsely positive reaction is sometimes tremendous and especially if it falls into the hands of a physician who accepts the results without question. In order to avoid the possibility of this error most serologists have purposely adopted a method known to be below the average in sensitiveness, being willing to "miss" many cases of syphilis in order to avoid the risk of nonspecific reactions.

As I have already discussed in a former article,[2] falsely positive reactions may be due to technical errors or to biological phenomena. The former is the more usual and important in this country at least; the latter occurs only in frambesia or yaws, a tropical disease produced by *Spirocheta pertenuis* and capable of yielding true positive Wassermann reactions with technically perfect methods.

Technical errors are or should be capable of detection and correction; the possibility of biological error resolves itself into the question whether or not the Wassermann antibody or reagin is produced in any disease other than syphilis and frambesia.

A review of the literature and especially the early literature on the Wassermann reaction shows that positive reactions have been recorded by some one at some time in practically all diseases of human beings. We now know, however, that much of the work has been based upon technical errors *although in a survey of any group it is entirely likely and to be expected that some cases of latent and unsuspected syphilis will be encountered yielding true positive reactions but regarded as a nonspecific or falsely positive reaction due to the disease with which the individual may be suffering in addition to syphilis.*

I do not deny that in leprosy, diabetes, uremia, jaundice, etc., such profound changes may occur in the colloidal chemistry of the plasma that the chances of securing nonspecific reactions are greatly increased but experience with my new complement fixation test has convinced me that these may be avoided by technical measures.

During the past two years I have had the good fortune of securing the coöperation of Dr. Oswald E. Denney, of the Public Health Service and surgeon in charge of the leprosarium at Carville, Louisiana, in a study of the new test in leprosy; of Dr. Lewis B. Bates, director of the Board of Health laboratory of the Panama Canal Zone and of Dr. R. L. Cook, senior surgeon in charge of the U. S. Veterans Hospital No. 25 in Houston, Texas, in a study of the new test in malaria; of Dr. Edward Steinfield, assistant professor of medicine in the Graduate School of Medicine of the University of Pennsylvania, in a study of the new test in diabetes, uremia, jaundice, etc., and of Dr. Frederick C. Smith, graduate student in gynecology and obstetrics in the University of Pennsylvania, in a study of the sera of pregnant women.

Dr. Denney and I have published the results of our study in leprosy elsewhere[3] and found that in nonsyphilitic lepers the new test yielded uniformly negative reactions, although the old test yielded apparently falsely positive reactions with 7.2 per cent of sera. Unquestionably in some cases of leprosy there is an increased tendency of the serum to yield falsely positive reactions and especially in tests employing alcoholic extracts of tissue saturated with cholesterol. But in my new test this tendency is neutralized by the use of a new antigen largely free from anticomplementary activity and by other technical improvements. Dr. Denney believes that a positive reaction with the new method justifies the clinician in proceeding with antisyphilitic treatment without the mental reservation that he may be uselessly subjecting a leper to unnecessary or even harmful measures.

Dr. Smith has likewise reported his work elsewhere[4] but here it may be stated that tests conducted with the sera of 94 women in the last few weeks of pregnancy yielded consistently negative reactions with all except five and all of these continued to react positively after delivery and were regarded as syphilitic.

The study in malaria has not yet been completed but up to the present time the sera of 25 cases have been studied with the results shown in table 1. In the first place it may be mentioned that of 27 sera sent to Philadelphia from Ancom and Houston, only two proved anticomplementary in the new method. Furthermore, all of a series of bloods from syphilitics sent me by Dr. Bates from the Canal Zone, yielded positive reactions showing that there was no loss of fixing power of the sera. The majority of these sera were from estivo-autumnal cases; five were from tertian infections. Blood was drawn from a few cases during a chill; in most, however, the specimens were secured from a few hours to three days after paroxysms. All except two yielded negative reactions. Both of the positive reacting sera were derived from Negro men two or three days after paroxysms; one of these men subsequently died and Dr. Bates was unable to discover macroscopic evidences of syphilis in his aorta and other organs although he states in a letter that this does not rule out the possibility of syphilis and that during 1923 twelve of his autopsy cases which had yielded positive Wassermann reactions in his laboratory during life showed no gross evidence of syphilis in the tissues. Since Warthin's epoch-making studies in the pathology of syphilis[5] we know that syphilis cannot be excluded by macroscopic examinations alone of organs at the necropsy table.

Dr. Steinfield and I are preparing to publish a detailed report on the new test conducted with sera from cases of diabetes mellitus showing from 0.150 to 0.400 gm. and more sugar per 100 cc. of blood and many in diabetic coma; all of a series of 32 cases yielded negative reactions. Likewise all of a series of 15 nephritics with marked retention of urea and many in uremia. yielded negative reactions. In a series of 15 cases of croupous pneumonia embracing all of the serological types, the reactions were negative with all except the serum of one syphilitic. All of the sera of 14 individuals with severe jaundice due to gall-bladder and liver disease and carcinoma of the pancreas, yielded negative reactions as likewise the sera of two cases of pernicious anemia.

In an extensive study of the tuberculosis complement fixation test by Dr. Andrew Callahan, assistant professor of medicine in the Graduate School of Medicine of the University, and myself, to be published later, the new test for syphilis was applied to all with uniformly negative results except with the sera of those known or strongly suspected as being syphilitic as well as tuberculous.

In addition to these I have conducted tests with the sera of a number of cases of acute and convalescent scarlet fever with uniformly negative results and I believe on the basis of these experiences that the new complement fixation test does not yield falsely positive reactions when the method is applied in a technically correct manner. It cannot be hoped that any method including mine, is free of the possibility of technical error; I am prepared to learn of apparent nonspecific reactions in the hands of others and myself but I firmly believe, that as experience is gained with the method that others will agree with my associates and myself that technical errors are reduced to a minimum and that in this country at least where yaws is practically unknown, the positive reactions may be accepted as evidence of syphilis.

Furthermore, it cannot be hoped or expected that clinical opinions will always agree with the results of serological reactions in either a positive or negative way. The clinician may be just as sure of his diagnosis as the serologist is of his, but I do believe that when this new test yields a positive reaction that the burden of proof is on the clinician. Time and time again I have found this to be the case and usually that the physicians have been misled by negative histories until patients have admitted venereal sores under the pressure of positive and repeatedly positive reactions.

Finally, it should not be overlooked that in latent syphilis yielding negative complement fixation reactions, that trauma, pregnancy, intercurrent infections and various types of tissue injury may stimulate the spirochetes into renewed activity with the production of true positive reactions which may be but temporary and analogous to the so-called provocative Wassermann reactions sometimes following the administration of arsphenamin and neoarsphenamin. Such reactions are easily regarded as nonspecific but are truly positive and the possibility of their occurrence under these conditions should not be overlooked.

THE SENSITIVENESS OF THE NEW COMPLEMENT FIXATION TEST

As previously stated the complement fixation test for syphilis should be as sensitive as is consistent with specificity. In the diagnosis of the chancre this is not of prime importance because laboratory diagnosis is better aided by dark field microscopic examination of the secretions for *Spirocheta pallida;* neither in the secondary stage of syphilis when the diagnosis is usually readily made alone by clinical examination. But in the tertiary and especially in the latent stages of the disease when the clinical diagnosis is doubtful or indeed impossible, and the serological diagnosis of most value, the complement fixation test should be as sensitive as is possible with specificity. This is especially true for the detection of latent syphilis in women and in congenital syphilis of both children and adults in which clinical diagnosis is frequently impossible. Furthermore, when the treatment of syphilis is being guided by Wassermann reactions, the method should be as sensitive as possible with specificity. Most of us are not overtreating syphilis; rather the tendency is to undertreat the disease and I believe that a specifically sensitive complement fixation reaction with both blood serum and spinal fluid constitutes one of the most important guides in the treatment of syphilis and insures more than any other single procedure the adequate treatment of the disease.

As previously stated we cannot hope to detect all cases of syphilis by the complement fixation or any other test or examination known to-day. The value of the history is sharply limited; all physicians treating syphilis know that not only may some patients persistently and untruthfully deny venereal infection but that some are perfectly sincere and truthful in denying all knowledge of the disease. And this is readily understood and especially in cases of women, when it is remembered that the primary lesion may be so small or so situated as to escape detection not only by the patient but by the physician as well.

Furthermore, the clinical manifestations of tertiary syphilis may be so atypical and misleading as not to lead even to a suspicion of syphilis unless a complement fixation reaction is conducted. And in the latent stages of the disease when the patient is apparently in good health or suffering with some additional nonsyphilitic disease, the physician may have absolutely no grounds or reason for suspecting luetic infection. I repeat, therefore, that not infrequently the physician cannot say that syphilis is or is not present in such cases and I am absolutely sure that in not a few the complement fixation test is the only or at least the main and best means for diagnosis.

This does not mean that a positive complement fixation reaction always indicates that a particular lesion is syphilitic; physicians of experience have frequently seen the tuberculous ulcer of the larynx regarded as syphilitic because the patient was luetic and yielded a positive reaction. We must not forget that the syphilitic is susceptible to tuberculosis, cancer and other diseases. Altogether too frequently we permit the diagnosis of syphilis to shut our eyes to the possibility of other diseases in the sick individual; we all know that it is indeed difficult for the luetic to recover from the "mental scars" of his disease but the physician especially should avoid falling into the same error of ascribing every ache and pain of the syphilitic to syphilitic infection.

My purpose in building up the new complement fixation test was to render it as sensitive as possible with specificity. To attain these ends a new antigen was discovered and numerous technical details included and no effort was made to popularize the test by turning out a short cut method. I am convinced that enough mischief has been done by such methods. Let us realize and admit that the complement fixation test is intricate and that it requires skill and experience as in most other lines of work and endeavor in medicine. Let us admit that a mere additional twenty-four hours and a little more labor are as nothing compared with accuracy. Why and how a physician will insist and demand a report on the same day that he sends a specimen of blood or spinal fluid to the laboratory is beyond my comprehension when the question of accuracy is involved. I can readily enough understand how a day makes some difference in primary syphilis when treatment should be instituted as promptly as possible, but here we should not rely upon the complement fixation test but proceed with the dark field examination which in experienced hands yields its results in a matter of thirty minutes. But even if the complement fixation test is required an additional wait of twenty-four hours makes little difference. But in chronic syphilis when months and even years have elapsed, insistence upon an immediate or almost immediate report is almost foolish even though the patient may be retained in a hospital for an extra day or two.

My new method, therefore, does not aim to be a short cut method and a serum received in the morning cannot be reported upon until the following morning because of the 18-hour primary incubation in the refrigerator. We could not escape adopting this method; an enormous number of comparative tests proved conclusively that the ice-box method yielded the most sensitive reactions which were at the same time specific and in our search for the best this fact could not be overlooked or ignored even if it meant increasing the sensitiveness of the reaction by less than 10 per cent.

In addition to employing a new antigen and refrigerator primary incubation, numerous other technical details have been introduced, some of which tend to increase slightly the time and labor required for conducting the test, but all of which I believe add their mite toward increasing specificity and sensitiveness. In our experience the new method has proven equal in sensitiveness to tests employing raw or unheated serum without danger of nonspecific reactions. I believe the new test serves for the detection of smaller amounts of antibody or reagin in the blood and spinal fluid of syphilis than most other methods in common use as well as yielding a quantitative reaction of particular value in guiding and evaluating the treatment of syphilis. In the primary stage of the disease positive reactions are obtained several days earlier than by other methods and likewise in the secondary, latent and tertiary stages the percentage of positive reactions is much higher and more specific than obtained by the usual methods as found not only in our work but likewise by Shivers,[6] Schamberg and Klauder,[7] Kilduffe,[8] Palmer and Gibbs,[9] Harper and Curtis,[10] Schamberg and Greenbaum,[11] and numerous others who have been kind enough to furnish me with reports of their work and experience with the method.

I know that many of the methods employed at present are excellent in every particular and particularly those used by serologists of experience; I do not expect and cannot hope that the new method will prove superior to these but I believe it will prove equal in specificity and sensitiveness and if a standardized method is advisable, as stated by several writers in order to have a uniform method for the reduction of confusion and to provide a means for comparing and evaluating different methods for the treatment of syphilis, I hope that the method will be given a sympathetic, fair and extensive trial. In our experience together with that of the investigators just mentioned, clinically certain non-specific reactions have not occurred in a total of over 15,000 tests and an increased sensitiveness has been commonly noted. Some quality of the new test and probably the new antigen which permits the use of a dose of 10 units which is at least 35 to 50 times less than the anticomplementary unit, has imparted to it an extremely high degree of specificity associated with sensitiveness and it is earnestly hoped that the fulfillment of these two qualities of first importance will outweigh the fact that the method requires a little more skill and time than most methods in use at present.

TABLE I.—RESULTS OF NEW COMPLEMENT FIXATION TEST IN NONSYPHILITIC DISEASES

Clinical	*Total Examined*	*Positive*	*Negative*
Syphilitic lepers	27	27	
Nonsyphilitic lepers	125	None	125
Lepers; syphilis suspected ...	6	None	6
Pregnant women	94	5	89
Diabetes mellitus	32	None	32
Jaundice	14	None	14
Uremia; chronic nephritis ..	15	None	15
Pneumonia (Lobar)	15	1	14
Malaria	25	2	23
Pernicious anemia	2	None	2

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DISCUSSION

Dr. Samuel R. Haythorn (Pittsburgh, Pa.): I do not wish to be interpreted as criticizing Dr. Kolmer's method or as trying to belittle the work when I say that we have not found it to be a panacea for all Wassermann troubles. However, it is one thing to develop a technical method and another thing to get the other fellow to use it. Practical serologists become partial to the technics which they have learned to use and evaluate and as a rule are unwilling to accept any new technic on faith. For this reason Dr. Kolmer has provided for a series of comparative trials and we have been making one of them. A few years ago at the Singer Laboratory, Drs. Hartman and Lacy and I worked out a quantitative modification of the original Wassermann test which has proved satisfactory in our hands. Later our method was installed at the Magee Memorial Hospital laboratory, and about one year ago Dr. Cohen, Resident Pathologist, undertook a series of parallel tests, running all of the specimens in which there was sufficient serum both by Kolmer's and our own methods. Last June we analyzed the results of 1,400 parallel tests. Only eight were entirely negative with one method and strongly positive with the other. Forty-six were partially positive with one technic or the other and entirely negative in its respective parallel test, while twenty-three varied somewhat in the degrees of partial positivity. Kolmer's method had a slight advantage in persisting during the treatment of formerly strongly positive cases. Dr. Cohen feels that both methods are sufficiently valuable to continue for the time being.

Regarding the test in pregnant women, our series comprises almost one-half of our total number of tests and is several times greater than the series quoted by Kolmer. While Kolmer's method gave fewer false positives in the later months of pregnancy than our method, there was one strongly positive Kolmer test where syphilis could not be detected clinically, and in which our test was negative. Dr. McMeans has found recently that the addition of one drop of 1 : 1500 acetic acid to a negative serum or spinal fluid will usually make it positive by our method. We have not tested this effect upon the Kolmer test but intend to do so soon.

Dr. Kolmer (in closing): I have felt it almost necessary to offer an apology for speaking of the Wassermann reaction this afternoon because the subject has been so long before the medical profession and yet the complement fixation reaction in syphilis has been so much abused and its true value so frequently misunderstood that I believe a large number of physicians require reëducation in the tremendous practical value of the test in the diagnosis of syphilis, as a guide in treatment and as a criterion of cure. I believe that the test has been rendered specific for syphilis in this country where yaws and trypanosomiasis are unknown and that after the primary stage of the disease it constitutes one of the best means for diagnosis and especially when diagnosis by history or clinical evidence is doubtful or indeed impossible; also that a sensitive test employed as a guide in treatment insures against the regrettable error of undertreating the disease.

SELECTIONS

THE MODERN TREATMENT OF FRACTURES*

LEVER F. STEWART, M.D.†
CLEARFIELD, PA.

At the risk of being accused of egotism but actually with the fear of stating what might not coincide with the thought of the majority, in presenting to you a discourse on the modern treatment of fractures I would ask that you consider my presentation rather as my own thought on the subject.

With no desire to dwell on points of common knowledge I am compelled to go over briefly some practical points on the mechanism of producing fractures and the histology of the healing of fractures especially in comparison with other body tissues, in order to present my case in a logical way.

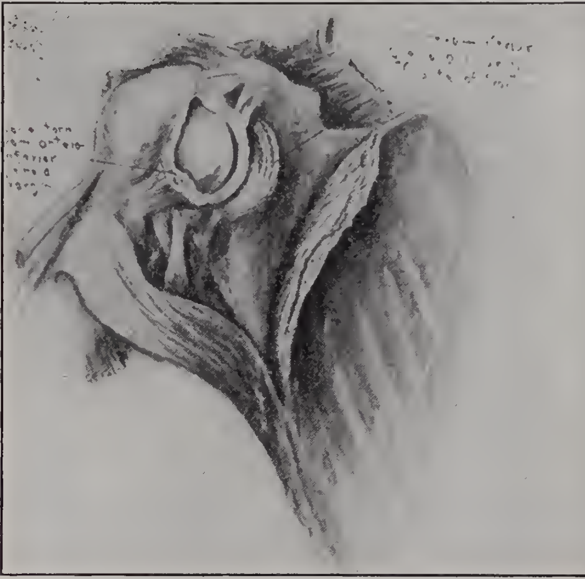

Figure 1.—Effects of experimental attempt on the cadaver to produce a subcoracoid dislocation at the shoulder. From Ross and Stewart.

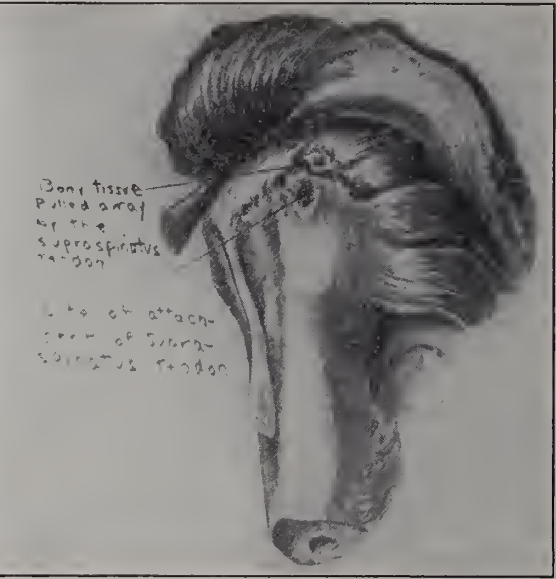

Figure 2.—Effects of experimental subglenoid dislocation. From Ross and Stewart.

I may say that annually the results in some two hundred to five hundred fractures pass under my eye. It is my privilege to select from the failures among them (and there are too many) the ones on which I believe reconstruction surgery can be practiced with success.

Fractures occur by direct or indirect force or violence. Fractures by direct violence are frequently comminuted and more serious and difficult to treat. Fractures by indirect violence occur frequently by virtue of the superiority in tensile strength of ligament, tendon and muscle over bone. These make up a considerable number of the fractures with which we deal.

My own experiments, covering some seventy, on the cadaver as well as living animals, have shown conclusively that where force—and it must of necessity be indirect force—is applied in such a way as to involve the giving way of an individual ligament, muscle, tendon or bony tissue, the bony tissue invariably gives way first, and usually at the site of attachment of the tendon or ligament; therefore fracture is essential to the occurrance of dislocation and dislocations must be accorded consideration in a discussion of the modern treatment of fractures. Where bony tissue has been pulled away by its tendonous or ligamentous attachment it is termed sprain-fracture. This condition occurs more frequently than it is recognized as an individual entity, and always occurs in dislocations. I challenge anyone to show me a dislocation in which sprain-fracture or a gross, a larger fracture, has not occurred. I, of course except the circumstance of a pathological process involving the tensile strength of the soft tissues. See cuts numbers 1, 2, 3 and 4 which show sprain-fractures attending luxations of shoulder, hip and knee from Ross and Stewart.[1]

The sprain-fracture is difficult to diagnose by x-ray. The picture often will not show it unless taken at a tangent to the area of injury to the bone. More certain is the sharply localized area of exquisite tenderness at the site of tendonous or ligamentous attachment with history of sufficient injury.

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*Read before the Academy of Medicine, Harrisburg, Pa., October, 1922.

†Surgeon to the Clearfield Hospital, and Consulting Surgeon to The Pennsylvania Bituminous Mutual Association.

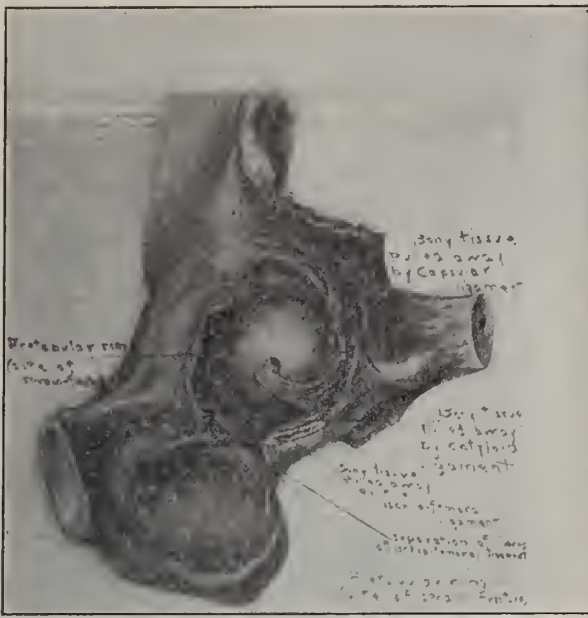

Figure 3.—Effects of experimental attempt on the cadaver to produce an anterior dislocation of the hip-joint. From Ross and Stewart.

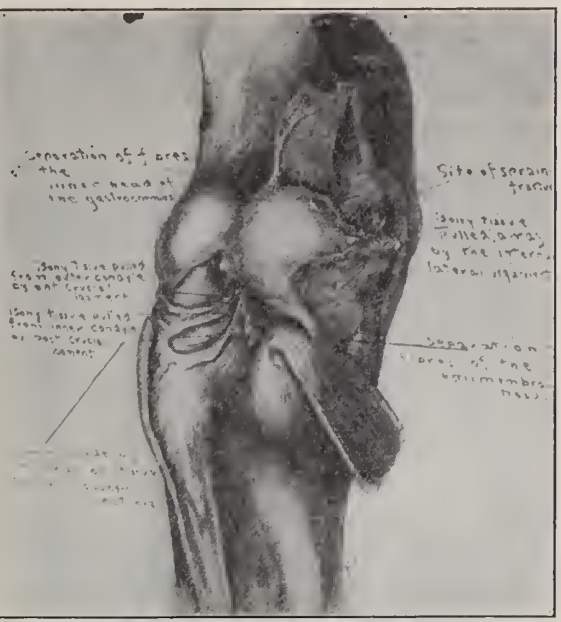
Separation of the inner head of the gastrocnemius
Site of sprain fracture
Bony tissue pulled away by the
Separation

Figure 4.—Effects of experimental subluxation backward at the knee-joint. From Ross and Stewart.

The treatment of a sprain-fracture or dislocation is the same as the treatment of the more apparent fracture. Immoblization is essential. Care in this will reduce the number of weak ankles and other joints following so-called sprain.

Figue 5 shows an old luxation of the acromial end of the clavicle that was difficult to hold by soft tissues as they had pulled away bone, but finally was very easily retained by the new bone formation which readily responded to local stimulation around silver wire that broke after fulfilling its purpose.

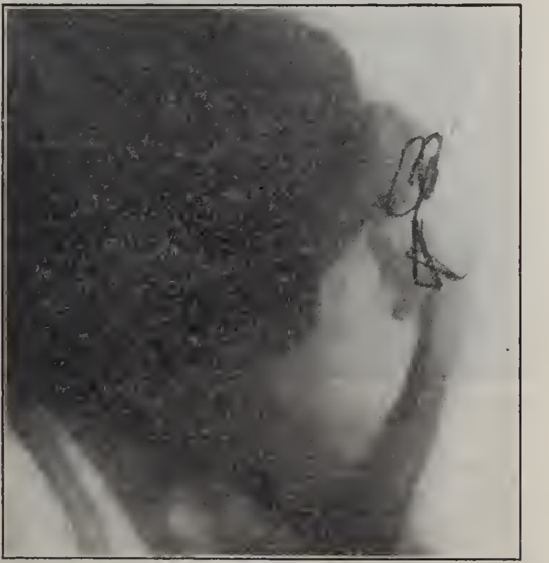

Figure 5.—Old luxation of the acromial end of the clavicle, retained by new bone formation around silver wire.

The rule in the healing of fractures is the early deposit of cartilage and bone cells in the

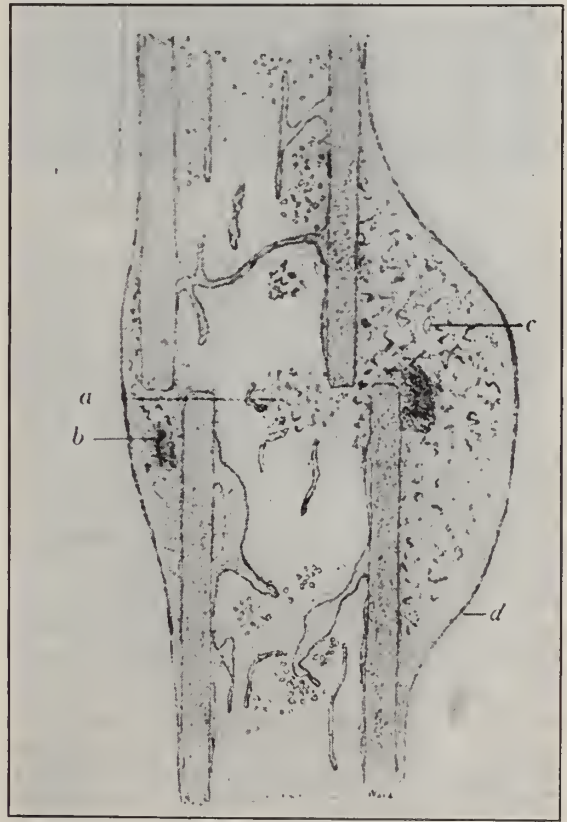

Figure 6.—Fracture of Rib. Specimen obtained ten days after injury. The formation of a periosteal callus is well advanced. a, Osteoid tissue in the medulla of the bone; b, cartilage; c, osteoid tissue from periosteum; d, periosteum stretched by new growth of osteoid tissue. From Keen, [illegible]

connective tissue that rapidly forms between the two fragments of bone and goes to make up the callus. These essential cells derived largely from the periosteal covering of bone early commence a reparative process that differs little from the familiar embryologic development of bone from cartilage. See Figure 6 showing early new bone formation following fracture. (From Keen.[2]) Where excessive callus forms as a result of the activity of osteoblasts, nature sends the benevolent osteoclasts to bring about its absorption and help restore a normal contour in addition to restoring the medullary cavity and haversian canals.

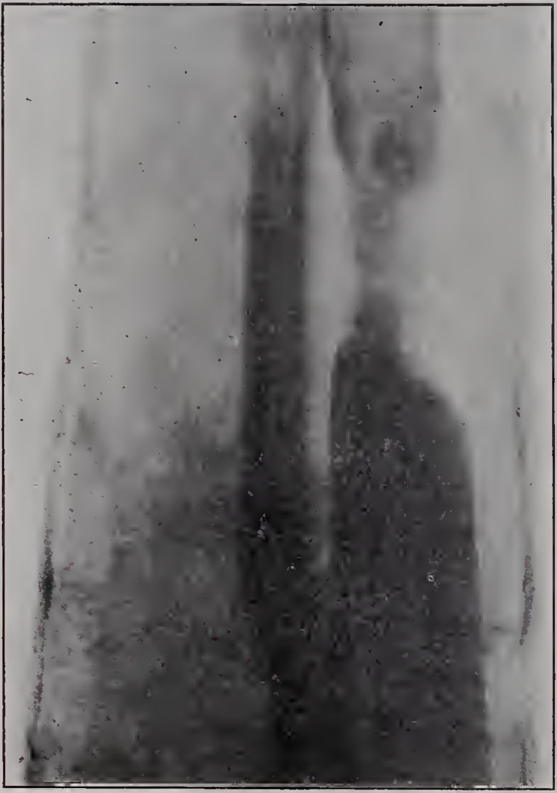

Figure 7.—A fracture of a recent bone graft.

All of this is a matter of common knowledge but we are not in the habit of considering that of all the tissues in the body excepting connective tissue, bone alone is capable of replacing itself in the healing process. Healing of the incised, lacerated or fractured muscle, liver, kidney, spleen, tendon or skin, takes place in but one way: the interposition of fibrous connective tissue between the incised surfaces as a result of the organization of the blood and other cells that have migrated to the wound. We have yet to see the incised muscle, liver, kidney, spleen, tendon, skin, or other tissue which after healing does not show a scar of fibrous tissue formation. In a few favorable instances the scar tissue formation may be scarcely perceptible but the difference is in degree and not in histology. This latter picture is helped by the well-known ability of squamous epithelial cells to proliferate and cover the scar. In fact our skin constantly gives off degenerated epithelium which is promptly replaced. Yet it is impossible to demonstrate microscopically for instance, a healed wound of the skin or intestine which shows a reunion or reproduction of normal tissue layers beneath the epithelial covering.

Far more interesting is a comparison of the results of transplanting bone and other tissues. Epithelial grafts succeed through the regenerative power of the squamous epithelium. Fibrous tissue transplants succeed because the normal healing process produces such tissue. It is my belief that no other tissue excepting bone, when transplanted, remains and functionates as such. I, of course except the two-stage skin graft. It is my belief that the transplanted

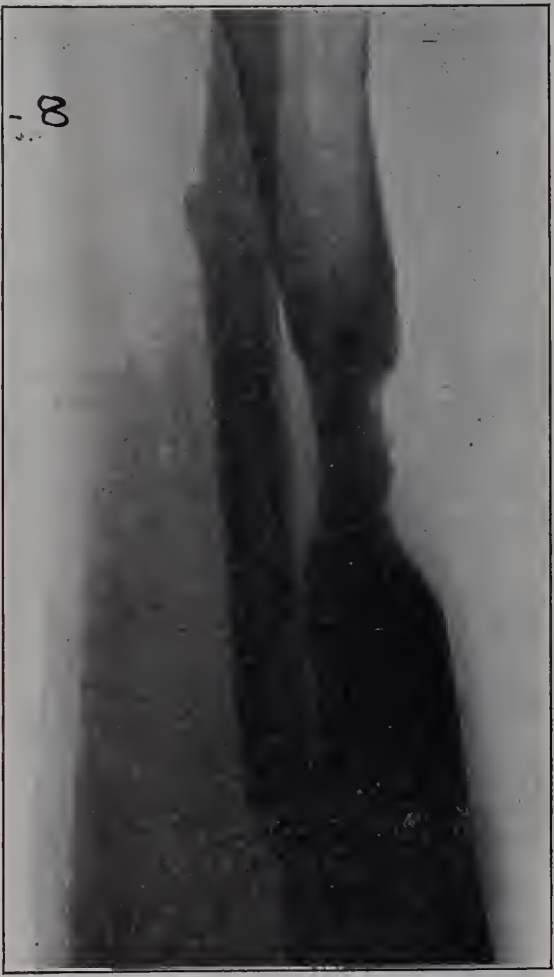

Figure 8.—Healing of the fracture shown in figure 7 and continued growth of the graft.

muscle, fatty, kidney, thyroid, testicular, ovarian and all other tissue does not remain as such but is absorbed and replaced by scar tissue. This statement is subject to challenge and will not be definitely decided until a large amount of experimental work is done in which stains with an affinity for certain types of tissue are used. Certain I am, that the most ever accomplished by the ovarian transplant originally perfected by Tuffier was to delay the induced menopause by the time required for the absorption of the ovarian tissue. The same may be said of transplants of thyroid and parathyroid. Transplantations of the testicle in dogs have only netted the results of casteration. Transplantation of fat, especially in an effort to overcome depressions in the contour of the face, have invariably been followed by very marked diminution in the size of the transplant—a shrinkage that could only be accounted for by absorption. Where I have used muscle transplants to control hemorrhage I have later found them as shrunken masses of fibrous tissue.

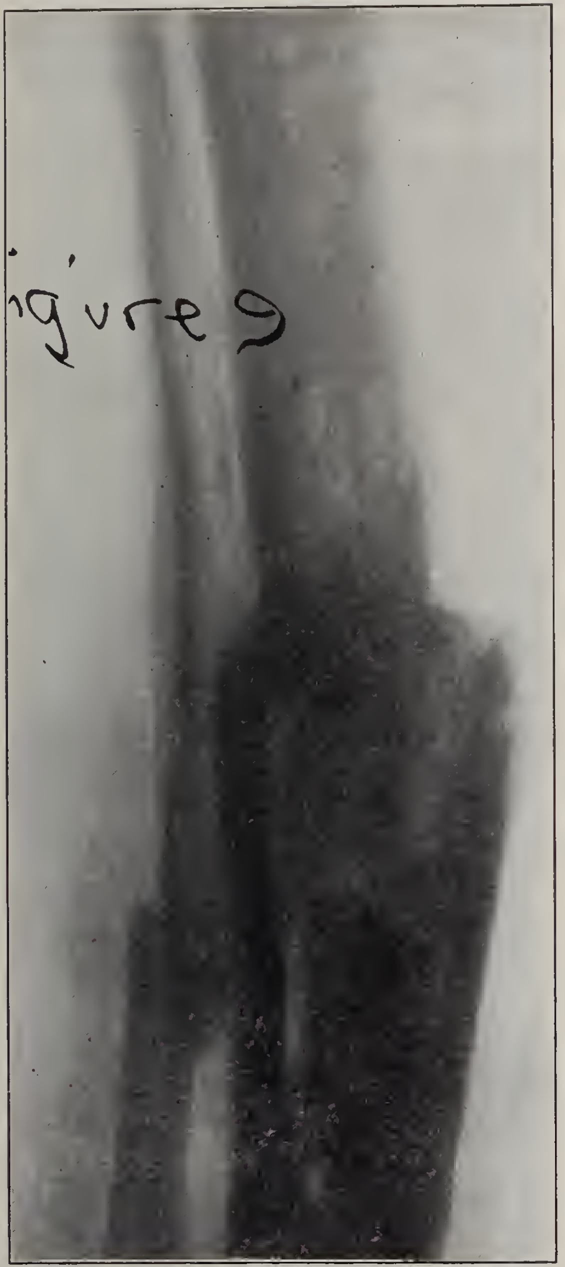

Figure 9.—Bone graft in communited fracture, complicated by a second fracture below site of graft.

These things in outline are in marked contrast to the behavior of transplanted bone. There is still dispute as to whether transplanted bone remains as such or whether it merely acts as a network for new bone formation, but there is no dispute about the transplanted bone's remaining as bone. I can readily believe that in certain instances the bone remains as such and in others there is new bone formation. Bone transplants are indispensable, especially in correcting improperly treated fractures. In spine grafts the transplant has endured for many years and it is hard to conceive of the spinous processes of the vertebræ contributing to the bridging of the spaces between them with com-

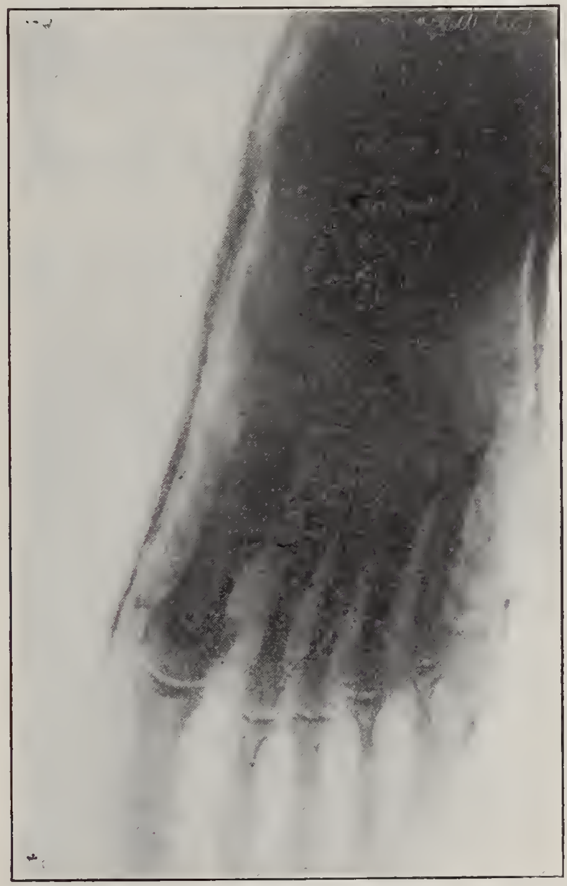

Figure 10.—Replacement of metacarpal bones, in one of which wire was required.

plete absorption of the graft primarily. Figure 7 shows a fracture of a recent bone graft which later not only completely healed but resulted in complete regeneration of the lost bone, making it strong enough for the patient to wheel dirt up an incline on an evacuation job. Figure 8 shows healing of the fracture and continued growth of the graft.

I have in mind a case of Pott's disease in a man aged 66 years, with loss of use of legs as a result of nerve involvement from extension of the inflammatory process. In removing the graft in this old chap I fractured it; however I placed it between the split spinous processes at the site of disease and there resulted perfect healing and complete recovery of use of legs. These last two cases can only be explained by the active development of new bone.

Haas[3] was able to show complete healing of a piece of fractured bone at the end of seventy-two days, after being transplanted into the lumbar muscles where there was no contact with bone.

In all my experience with transplants I have had one failure. This was due I believe, solely to improper immobilization of the leg and release of the graft.

Many of my graft cases show the wonderful healing and replacement qualities of bone. They show the willingness of nature to make vast repairs if properly aided.

This discussion of the healing of bone I believe justifies my feeling that in the treatment of fractures one should not be content with less than perfect anatomical replacement by the simplest available method, and failing in closed methods, operative interference should be undertaken with perfect confidence, in the presence of proper aseptic technique. It is my habit to use the no-touch technique of Lane in this work but I am willing to discard it temporarily during operation if a good purpose can be served by palpation. With proper apposition of fragments and removal of interposed tissue the healing of bone is one of the most certain of physiological processes. Infection is decidely infrequent and not serious. Bone is resistant to infection. I have encountered difficulty in healing in only one case of fracture in which I have operated. This was not from infection but from an area of transplanted bone uncovered by periosteum and difficult to cover over. See Figure 9, suggesting somewhat a cubist picture. This was a badly communited fracture in which I did a bone graft. The bone became solidly united quickly. Healing was later complicated by a second fracture below the site of the graft. This occurred during a brawl. The second fracture has healed and the original opening is now practically healed.

Open operation naturally suggests the application of plates and other foreign material. This is by no means always necessary. Frequently open reduction of the fracture with the application of splint or plaster is sufficient. See Figure 10, in which wire was necessary to hold one metacarpal, and simple replacement sufficed for the others. If fractures such as this are not perfectly reduced, walking becomes a very painful and annoying procedure.

Foreign bodies should never be used to hold compound fractures in position. The surgeon following the practice of applying foreign bodies in compound fractures ranks with the abortionist in obstetrics. Either procedure is criminal. The one frequently destroys the possibility of union. The other frequently destroys the products of conception.

Most of my problems come from the improper early treatment of fractures. The old dictum that this type of splint should be applied to such a fracture and that type of splint should be applied to such another type of fracture no longer applies. There is only one rule for the treatment of fractures, and that is perfect reduction followed by perfect immobilization, which is best gotten by plaster cast. I say perfect reduction, as a matter of fact proper apposition of ends of fragments usually suffices. I have been asked how I treat fractures of the femur. My answer could only be "by the simplest method of reduction and retention applicable to the case."

In so far as it concerns arms and legs, the teachings of the United States Bureau of Mines is antiquated and barbarous.

No fracture of the arm or leg should be moved, let alone transported, without the application of the Thomas arm or leg splint. This splint properly applied immediately starts extension, the first principle in reduction, and permits of less discomfort in transportation. The advent of debridement has extended this rule to compound fractures. I have seen fractured femurs arrive in the Clearfield Hospital in such comfort and condition as to make one question the existence of fracture.

The principles of traction and counter-traction between fixed points stressed by Jones, of Liverpool, during the World War are good enough for infected compound fractures common in war practice. They are good enough for fractures of long bones in civil practice where there is hope of reduction by overcoming muscle spasm; however, in the absence of infection this principle should not be persisted in for a period longer than ten days if not productive of result. After this, organization of callus and the rigidity and induration of muscular tissue makes open reduction most difficult. Efforts at replacement of over-riding bones becomes increasingly difficult up to the end of six weeks, when reduction is virtually impossible and the best possible accomplishment at this time is excision of ends of fragments, permitting contact of ends in alignment but with practically the same amount of shortening existing before operation.

I would plead for a physiological law placing fractures treated by traction and counter-traction on probation for a period of ten days, during which time decision should be made as to whether reduction is possible or not. Such opinion should be guided by the findings of a bedside x-ray. This makes it imperative that all fractures be confined to hospitals where this facility is available, until they are properly and permanently reduced. If one finds at the end of ten days or earlier that he has not gotten or has not the assurance of perfect reduction, open operation should immediately be undertaken in the absence of the usual contraindications to operation. In some fractures no amount of strength or effort at traction and counter-traction will ever complete reduction without incision and direct handling of fragments. The work of Tidsall and Harris[4] shows that during the period of union of fractures in adults, the phosphate contents of the blood serum is raised to a level approximately the same as that present in childhood—the period of active growth. This is another argument favoring the obtaining of reduction within ten days.

My own experience has made me for some years make it a rule to operate on all clavicles where there is complete fracture, as I have never seen any method of reduction short of operation successfully reduce the invariable deformity accompanying such fractures. These cases are best fixed by Lane plates which can easily be removed under local anesthesia or gas at a later time when their usefulness has passed. Sometimes their position directly beneath the skin causes discomfort and removal is indicated. In selected cases of compression fracture of the vertebræ, it is my rule to bridge the site of injury with an Albee bone graft which not only helps restore the strength of the vertebral column but gives the added advantage of fixation with freedom from pain. I have one of these cases mining coal. He had a compression fracture of the vertebræ with marked angular deformity. Reduction was made by placing patient on abdomen on table and depressing the table beneath site of fracture and elevating head and feet, in other words forming a V. I subject all fractures of the patella to operative reduction, as there is no method simpler than incising, freshening the fractured surfaces, approximating them, and uniting the strong ligamentous attachments. I have by no means always found it necessary to operate on fractured femurs. Ice tongs are most satisfactory for extension. Latterly I have been tempted to do open operation on certain fractures of the pelvis with deformity. I feel certain better results can be gotten in these cases, especially those involving displacement at the symphesis. However the risk of infection in the pararectal and Retzius spaces is real and I have had no cases favorable from this point of view.

In conclusion I would say that the usual physical impairments that contraindicate major surgery should apply to the open reduction of all fractures; but when one considers the wonderful power of regeneration that bone has and the almost unfailing response it gives to proper reduction he does not reject operative procedure lightly when other methods fail. The mortality in bone work is decidedly low. Many of the base hospitals handling these cases during the war were able to show mortality records of one-half to one per cent in spite of the virulent infection present in practically all of them.

The treatment of each fracture is a law unto itself. Principles control.

Forearm fractures are among the most difficult to replace.

The modern treatment of fractures demands anatomical replacement confirmed by x-ray. This should be accomplished within ten days.

Frequently approximation and retention can be accomplished by open operation without the aid of plates, wire or sutures.

The modern treatment of fractures reduces reconstruction surgery to a minimum.

Bone tissue per se has regenerative powers superior to those of any other body tissues and for this reason lends much to the comfort of men and the glory of the surgeon. Bone tissue wants to unite and, given a bit of help, it cannot be prevented from healing. Bone tissue is resistant to infection.

I acknowledge with pleasure the aid of our roentgenologist, Dr. W. E. Reiley, in providing the plates shown.

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CONCERNING TREATMENT OF SYPHILIS

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The present-day treatment of syphilis, unless one be a syphilographer, is one of utter confusion. This is not to be wondered at perhaps when one reads the many articles printed, and while the word "propaganda" is much hackneyed, there is no word that fits so well.

The average medical man is led to believe that, given a positive Wassermann, a few injections of any one of the arsenical preparations which the writer of the article may be advocating, and behold, the patient is cured!

Nothing could be further from the truth. To begin with, Wassermann reactions, to any one having large numbers done and observing them closely, are unreliable and the medical man depending on them entirely is not treating the patient or his infection but is treating the Wassermann reaction.

To anyone treating large numbers of syphilitics, it is quite strongly emphasized that there are very few of them that can be treated alike. In acute cases we have not only the disease to treat but the patient, and in the old cases we have not only the patient to treat but the disease, and when are we to know if they are cured and will stay cured?

We have so very many theories of treatment by this and by that and we are told to use so many injections of this and so many of the other thing. The patient's general condition is passed lightly over, if mentioned at all, but we are given long tables of Wassermann reactions, which to close observers mean nothing.

To my mind the important thing in the treatment of syphilis is the patient, except in very acute infectious lesions, where, of course, the first consideration is to render him noninfectious. Always, the patient's general health and hygiene should be gone into. Weight, I find to be a most important indicator and careful note should be made of loss and gain. The patient's general mode of living should not be made a subject of burdensome restrictions. It is not important enough to risk breaking down his morale.

How shall we treat this syphilis? This is a question to be solved by the medical man himself or face to face with his patient. Let us go back a little to the clinical side, even if it is at the expense of the laboratory. The only general rule that can be laid down, and that subject to the patient's condition, is administration of mercury and arsenic, not in series but together. No form of administration can be recommended. That is for the medical man to decide and it can only be decided by that medical man after a review of the patient, the clinical side, and lastly, and least important, the laboratory findings.

By taking these general rules only, can syphilis be treated intelligently and successfully. As to drug administration, arsenic is best given intravenously, if possible; if not possible, then intramuscularly. The dosage must conform to the equation of the patient; frequency, again the patient. Mercury, too, is best given intravenously; if not possible intravenously, then by mouth and in fresh, easily soluble form; not too much—small doses are much better continuously than large ones interruptedly. The arsenic and mercury should go hand in hand.

Do not place too much dependence on intramuscular injections of mercury; they are a lottery. They may be absorbed or they may be in situ years hence. Inunctions, too, are a lottery. The patient may be in a hurry and omit them. They very probably will not be properly applied and at best they are a filthy method of treatment.

As to the iodides, they are for late syphilis, and their advisable methods of administration are for the medical man to decide. Length of treatment and decision as to cure are questions difficult to answer and must be left to the man who is doing the treatment, and the picture the patient presents. In the present state of Wassermann reactions, I do not feel that the whole question can be left to the laboratory alone. If it is, many disappointments will follow from recrudescences of the disease. There are at present great numbers of preparations of various drugs advocated for the treatment of syphilis. The best that can be said of them is that they are in the experimental stage and have not been proved. That some of them will prove valuable adjuncts to arsenic and mercury I am hopeful, but it is much too soon to make a positive statement of their absolute value, and recommendations to the general medical public are either propaganda or pure guess work.

While the importance of careful, continuous and scientific treatment of syphilis cannot be exaggerated, neither can the casual, careless treatment and lack of after observation be too deeply condemned. When the aftercoming effects of syphilis are considered, this becomes obvious. Syphilis cannot be successfully controlled by commercial methods. It is only by using all the available weapons at hand that we can hope for good results, and it is only by treating each patient individually that we can hope for success. The days of precocious malignant syphilis seem happily past, but are we better off with the insidious, sneaky forms than with the old, frank cases? The latter were easier to recognize and treat than the insidious cases, but we can console ourselves with the knowledge that dissemination is reduced to a minimum. That the infection will ever be conquered seems very doubtful, but every medical man, by careful study of the patient and by careful follow-up of these patients, when possible, after he is convinced that they are rid of the infection, can help.

None of us can be sure of our diagnosis in any given case; none of us can do more than to assert that to the best of our knowledge and belief it is present, but in view of the appalling statistics on accidents in industrial lines that are undoubtedly due to unrecognized syphilis and are now being credited where they belong, the grave importance of recognizing syphilitics is being impressed more and more. This is entirely apart from the handing down to future generations of this tremendous load, which I fear from the present outlook will not be lessened as time goes on.

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FOCAL INFECTION; THE PROTECTIVE MECHANISMS OF THE BODY AGAINST INFECTIONS*

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The purpose of this paper is to present a few of the facts and problems concerning the mechanisms of infection, with especial reference to the protective forces.

The subject is here considered from the standpoint of a disease in the pathological sense. A disease is defined as that reaction on the part of the body to a stimulus, whereby the physiology is altered by minute, gross and chemical changes, producing subjective symptoms and objective signs.

An infection is the result of a stimulus and may be defined as the invasion of a host by a vegetable parasite whereby it incubates with the production of a reaction and a disease. The invasion is the actual passage of the infecting stimulus through the bodily avenues of defense against it. The portal of entry is the actual position or site of invasion and *every infection has a portal of entry*. This may be so minute as to defy detection, it may not be characterized by any reaction at all, or it may be characterized by a very definite reaction as is the case in the chancre of syphilis.

Infestation is the term reserved for the invasion of a host by an animal parasite such as the hook-worm, Uncinaria Americana.

The older distinction between an infection and a contagion should be dropped and both should be used synonymously. If the definition of an infection as given is accepted—an invasion of the host and the subsequent reaction—as far as the study of a disease is concerned, there can be little difference in the end result as to whether the acquisition is by direct contact, through an intermediary carrier or by fomites. The latter, however, are of importance in epidemiological studies.

The forces that are operative during an infection depend upon the bacteria and the host. It is important to recognize that both have factors and forces which are protective against the other and both have factors and forces which are beneficial to the other. Bacteria generally are divided into the pathogenic and nonpathogenic groups, i. e., the producers and the nonproducers of disease. The latter thrive on dead material which is incapable of reaction and are disintegrating in character; while the former thrive on living material, producing reactions which are more or less specific in character and give the well-known symptom complexes recognized as diseases. It is necessary to emphasize at this point, that while such reactions are specific, and such diseases are clear cut (as for example, an infected finger, pneumonia, gonorrhea, a fracture, appendicitis or typhoid fever) the mechanism of infection is very similar in every case. The variations are due not to any weird vagaries, not to any hit or miss chance, not to a touch of stomach trouble, not to biliousness, not to typhoid-pneumonia, not to dozens of other off-hand explanations, but to well laid plans of attack on the part of the offending stimulus, to variations in anatomical structure of the part involved, to the intensity of the stimulus, to the degree of altered physiology and to the power of the host to react.

Bacteria in their fight for existence are protected by substances which are antagonistic to the host. By the concentration and development of these protective forces the virulence of a given bacterium is measured. Bacteria in or upon a host find a favorable site, surroundings, nutritional values, heat and moisture for their growth. Emphasis should be placed upon the fact that to date no evidence has been offered to prove that a passive residence results in invasion or in the development of any antagonistic processes on the part of the host. This answers the question so frequently heard, "Is the carrier, a meningococci carrier, for example, relatively immune to the disease or is he not likely to develop the disease because of an acquired immunity?" He is not influenced one way or another by reason of being a carrier, unless he has been invaded and then he must of necessity have had the disease and acquired any or all of the immune factors granted, by whatever the nature of the infection may have been.

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*From the Department of Laboratories and Research Medicine, Geisinger Memorial Hospital, Danville, Pa. Read before the Censorial District Meeting, Selinsgrove, Pa.

Infection on the part of microörganisms depends upon the number planted, the survival of the fittest, the virulence at the time of planting or invasion, the concentration in numbers at a given point, the virulence of the toxin produced, the specific selection of certain strains for certain group units of cells, and the changes produced in their characteristics by the reactive forces of the host.

The reaction to infection on the part of the host is manifested in a variety of ways. The protective surfaces of the body are anatomically constructed as barriers. When these are denuded or traumatized a direct pathway for invasion is opened up. The fluids of the body bathe the surfaces and having a bacterial flora, nonpathogenic as well as pathogenic in character, maintain a chemical reaction. These fluids are mechanically as well as chemically antagonistic to certain types. The power of symbiosis of bacteria may be altered by these fluids and thus add a small but important factor. Following invasion, the local reaction on the part of the blood vascular system offers a second line of defense entrenchment. The individual cell units invaded have little to do with the formation of immediate antagonistic bodies but are more important in the later reparative changes. Finally the large element of immune bodies, active or passive, constitute the rear guard and reserve.

In a review of these various forces much has been accomplished and a little detail on some of the important points is necessary. In the case of bacteria their growth depends upon heat, moisture, food and chemical reaction. In their development these forces must always be borne in mind. They, the bacteria, are struggling for their existence and being without conscience they care little for the destruction left in the pathway of that struggle. Given the proper surroundings they multiply, some rapidly, some slowly, and in their multiplication gain strength by their very numbers. This results in concentration at the point of attack. Necessarily the products of this concentration, the toxins, in their increase become more potent and the vicious cycle once started rolls on. The well established facts of virulence lowered and increased is operative in this struggle. Bacteria submitted to repeated animal inoculation increase to a maximum in their virulence by successive passage through animals. On the other hand, bacteria submitted to repeated passage through culture media lose their virulence and may even be robbed of it entirely by the addition of antagonistic substances to the media. Passage of these attenuated forces again through animals revives their virulence. It is the recognition of these forces which underlies some of the main avenues of antitoxic efforts.

The work of Rosenau on the selective action of certain strains of bacteria, notably streptococci for certain group units of cells, has much of merit. This force, in connection with the other factors of invasion, is always to be reckoned with.

The avenues of defense of the host are of necessity the important barriers to infection. Skin surfaces and mucous membranes are histologically constructed in cemented layers to offer mechanically a strong defense. When these lose their continuity by reason of trauma or disease, an open pathway is immediately offered. This may not result in infection although partial invasion takes place. Such examples are seen every day in abdominal or other operations. In these cases a few bacteria, even pathogenic strains, are planted on raw surfaces but the other mechanisms of defense are capable of overcoming them and so nothing is heard from such an invasion in the vast number of cases. If, however, invasion takes place through a pathway weakened by frequent attack or by disease, reactive infection frequently occurs. This is well seen in and about the pockets of pyorrheal teeth, in diseased tonsils, in nasal and sinus troubles, in middle ear and mastoids, in intestinal disorders and infestation, in and about hair follicles and many other conditions.

The changes in chemical reaction of the fluids of the body may change an otherwise completely antagonistic medium to a very favorable one. It is well known that a slight degree of acidity or alkalinity in an artificial medium changes the luxuriance of growth of such delicate organisms as the pneumococcus, menigococcus and bacillus influenza.

Organisms present in some of the fluids are antagonistic to other organisms as for example, Döderlein's bacillus, the so-called watch dog of the vagina. Much has been attributed to this bacterium in the protection against infection following labor.

Once invasion has resulted, the complex mechanism of the blood vascular system known as local reaction very often serves to confine the stimulus to the portal of entry. Great care should be exercised in these cases to favor such localization and to avoid disturbing what nature is so aptly able to accomplish. The blood vessels pour out serum which dilutes and neutralizes the toxin, produces and supplies antitoxin and other more complex antibodies. The cells, notably the polymorphonuclear forms of white blood cells, exude to act as phagocytes and in their battle become pus cells. The rôle of the phagocyte or scavenger is one of the most important of the mechanisms but can only be successful in connection with the other factors. The leukocytes actually devour the bodies of bacteria and attempt the neutralization of their contained poisons, the endotoxins. The formation of pus with good local reaction is an excellent indicator of generalized reaction on the part of the individual and should be looked upon with favor. In the treatment of these reactions every effort should be made to favor complete restriction. Incision and drainage should be complete but not too widespread, not further than the reaction and not enough to open up new pathways for further invasions. All pressure, squeezing, picking and unnecessary trauma are absolutely to be avoided. Much harm has resulted from these practices.

The discussion of the factors of immunity will be left for the future. This is a large and important subject and probably better known than the more simple factors which I have tried to enumerate.

The understanding of the pathological principles underlying infection in general has an absorbing fascination as well as offering a better understanding of the alterations in physiology and a clearer interpretation of the subjective symptoms and objective signs.

THE USE OF COLEY'S MIXED TOXINS IN THE TREATMENT OF CHRONIC ARTHRITIS*

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One need not look very far into the endless literature to realize fully the perfectly hopeless task of finding a suitable classification of the various forms of chronic arthritis. It is also not within the bounds of this short paper to enter into any lengthy discussion. Suffice it to say that the term chronic arthritis as here employed embodies those types which are variously classified as: chronic nonsuppurative arthritis; rhumatoid arthritis; chronic infectious arthritis; chronic osteo-arthritis or arthritis deformans. Gout or gouty arthropathies, being a purely metabolic disease, is not here considered. The same holds true of the arthropathies of nervous origin or those occurring in tabes dorsalis (Charcot joints) and in syringomyelia. The chronic hypertrophic osteo-arthropathies occurring in the course of pulmonary tuberculosis, bronchiectasis, chronic bronchitis, malignant tumors of the lung and various chronic cardiac conditions are again distinct and are not included in the above term, chronic arthritis, as here used. Syphilitic arthritis is again a more or less distinct entity and is not here considered. Villous arthritis is probably a stage of chronic osteo-arthritis and will be considered as such. Fibrositis and panniculitis will be described as a part of the chronic infectious process so frequently occurring in this type of case.

The vast majority of the remaining cases will fall into that group in which we are primarily interested. This group is characterized at the beginning by swelling of the smaller joints, both metacarpophalangeal and metatarsophalangeal. The process may be unilateral but is more often bilateral. In the early stages the joints gradually swell with little or no pain. This gives them the characteristic fusiform appearance. Upon examination they have a distinct doughy feeling. At times there is a questionable effusion into the joint. Pathologically, this enlargement is due to swelling and hypertrophy of the synovial membrane and capsular ligament. Pain is only present upon pressure and active or passive motions. The disease progresses with definite periods of acute exacerbations, characterized by fever and its accompanying symptoms, increased pain and stiffness in joints and surrounding structures; frequently by focal manifestations, as increased swelling and redness in the joint structures themselves. These periods are also associated with a slight increase in the leucocyte count as compared during the stage of quiescence. In all respects it follows clinically the course of an infection. During this time the disease progresses upward, involving larger joints, namely, the wrist, elbow, shoulders, ankle, knee, hip and joints of the spine.

Soon after the beginning of the process, which in itself is essentially a hypertrophy of the periarticular structures, we have an atrophic process set up. The atrophy involves the muscles, subcutaneous fat and skin. These atrophic changes are undoubtedly due in many instances to a reflex atrophy. Vulpian's idea, namely, that impulses carried from irritated articular nerves alter the trophic activity of the cells in the anterior horns without causing a lesion, but sufficient to cause atrophy and weakness, is an extremely good one and is the best explanation offered. It is the glossy atrophic condition of the skin, atrophy of the subcutaneous fat and muscles plus their subsequent contractures, which gives the characteristic deformity. The extensor groups of muscles always suffer greater damage than the flexors. Hence flexor contractures always predominate. This is explained by the fact that the nerves which supply the extensors also supply the joints themselves, consequently they bear the brunt of the irritation and the greatest atrophy.

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*Read before the American Climatological and Clinical Association, Niagra Falls, Ont., May 25, 1923.

Associated with this degenerative process is a fibrositis involving both the aponeurosis and the muscles themselves. In fleshy individuals the subcutaneous fat is also caught in the process in the form of a panniculitis. These two conditions account for a good deal of the patient's suffering, and as we will see later, form a very important part of the treatment.

The feeling that this type of case is always due to a chronic infection is fast gaining ground. Even though the causative organism is not found, the clinical course, with its frequent, regular, acute exacerbation associated with fever, increased swelling, pain and redness of the joints, and increased leucocytes as compared with the quiescent period, is sufficient to establish this fact. Consequently, when such a case presents itself for treatment we immediately look for focal infection. Teeth and tonsils correctly occupy the foreground as the most frequent sites of focal infection. Following these are the sinuses, gall-bladder, prostate, infected ingrown toenails, ulceration along the intestinal tract, mediastinal lymph nodes, etc. The female pelvis has not been found an important factor in our group of cases. In one case now under treatment the mucous membrane of the mouth afforded repeated rich groups of a hemolytic streptococcus. Otherwise no source of infection could be found. The prostate and seminal vesicles are frequently overlooked, and when found as a source are too often looked upon as gonorrheal. The streptococcus may long persist without any gonococci being found. Nonsurgical biliary drainage, done in an aseptic way may afford many opportunities for the study of the gall-tract for infection. Too often we overlook the bacteriology of the feces, as here is a not infrequent source of streptococcic infection. Again we must remember that in the vast majority of cases, we are dealing with not one focus of infection but many. The eradication of a dental abscess or a pair of tonsils does not mean that we have removed all the sources of infection. When one considers a mediastinal lymph node or an intestinal ulceration as a focus, he will readily realize the difficulties in their removal. It is because of this fact and the repeated failure in not getting good results, that lead us to the utilization of a streptococcus vaccine. The vaccine also has further assets. It probably stimulates antibody formation to overcome any focus not eradicated and at the same time seems to aid in a causation of a retrograde process in the particular structures themselves.

During the past seven years Dr. Robert G. Torrey and I have been using Coley's mixed toxins (a mixture of streptococcus erysipelatis and bacillus prodigiosus) in the treatment of this type of case, with surprisingly good results. This vaccine was selected solely because of the potency or virulency of the streptococcus used, 0.01 c.c. of the cultures being sufficient to kill a white mouse in 24 hours. Again it is easily obtainable in the market, which is a distinct advantage to many men. The action of this vaccine is undoubtedly that of a high-powered foreign protein but, on the contrary, after observing quite a series of cases, one cannot help but wonder if it is not in some way a specific. It suggests the thought that the strain of streptococcus causing this disease is in some way closely related to the streptococcus of erysipelas. Thus far I have treated a series of 21 cases. Of these 21 cases, 12 have been cured, 7 are still under treatment with marked improvement (diminution of pain, swelling of joints, decrease of ankylosis, acute exacerbation being lessened in frequency and severity and finally abolished, with general improvement in health and gain in weight). Two cases stopped treatment because of severe focal and local reactions. The type of cases treated have been, in the vast majority, cases that are far advanced. The earliest case treated was of three months' duration. The oldest case of 15 years' duration. The average length of duration previous to treatment was 3¼ years. The length of treatment varied equally as well. The earlier the case was started, the shorter was the duration of treatment. In the earliest case the vaccine was given over a period of three months; in the longest case the vaccine was carried over a period of fifteen months.

Mode of Treatment

When the case presents itself the patient is studied thoroughly from all standpoints. Especial attention being paid to focal infection, teeth, tonsils, sinuses, gall-bladder, stools, etc. If the patient presents gastro-intestinal symptoms, fractional gastric analysis, feces examination and x-ray studies are made. The colonic stasis which is rather frequent in this type of case is corrected by diet and frequent colonic irrigation, using large quantities of water. The patient is usually undernourished, especially so in young people, and I always encourage forced feeding; diets of special food have not proved satisfactory in any other way. For the past few years I have been making complete blood studies, including complement fixation tests and the estimation of urea-nitrogen, blood sugar, uric acid, creatinin and the chlorides. It has proved very discouraging with the exception of an occasional high uric acid content. This I believe is of extreme importance in helping to differentiate some of these cases. One of my cases has a combination of a rheumatoid and gouty arthritis. She runs a rather persistent high blood uric acid. When the gall-bladder is under question the bacteriology of the bile is studied after aseptic transduodenal lavage. Surgery is only employed after a proved focus has been found. Needless to say, other various x-ray studies are made as indicated, including the joints themselves. These patients are usually placed in hospitals for a short time during the starting of the vaccine. Rest in bed is a very essential element in these cases, and a few weeks in bed usually affords benefit. At the same time it accustoms the patient to the reaction of the vaccine.

In starting the vaccine it is very essential to start with a small dose, usually ¼ minum in 1 c.c. salt solution or sterile water. This is given subcutaneously. Three types of reaction are experienced, focal, local and general. It has been my practice to tell these people that after the vaccine injection they will have pain in joints heretofore unknown to be involved. The pain in the joints is invariably increased after the first four or five injections. This thereafter will gradually be diminished and the period of freedom from pain will gradually be increased. At the site of injection a marked erythematous area develops. The fluid is quite irritating and at times you will think of abscess formation. This I have not experienced, but for a week or more the hard indurated nodules persist. These patients are very hypersensitive to the vaccines and the dose must be increased very slowly. This hypersensitivity persists surprisingly throughout the course of treatment, and varies with each individual. The largest dose of vaccine given was 10 minims, and that after eight months' treatment. In the case of 15 years' duration in which we obtained a beautiful result, I could never give over 4 minims without causing a general reaction. It is to be remembered that in these cases of long standing the patients are usually anemic and markedly undernourished. The pain has been severe and their nerve is broken. Consequently it is important to try and avoid a general reaction. While this does not do the patients any harm, it is bad from a psychologic standpoint. In addition, they have been through so many hands and tried so many forms of treatment that they are always dubious of any new treatment, and especially so if they are to have more pain in the beginning.

The time interval of the injections varies from three to four days at the beginning, gradually being lengthened to five or six days as the symptoms improve. It has been my rule to gage the time of injection and the size of the dose entirely upon the local reaction. If it be severe, the same dose is repeated. At times it is necessary to repeat the same dose as many as four or five times before increasing the vaccine. Especially is this true as the larger doses are used. The vaccine is continued until the patient is clinically well. Unfortunately the time of stopping the vaccine is entirely empirical as I know of no way of telling when the infection has been entirely killed out.

The benefits derived are a diminution of pain plus a loosening up of the joints. The acute exacerbations which are so characteristic of the disease gradually diminish and are finally obliterated. It is remarkable to see the rapidity of diminution in the size of the joint. The patient through his own efforts will begin to move the joint and loosen it up as soon as the pain subsides. In the febrile cases the temperature gradually returns to the normal course. The patient's general health improves and he soon loses his toxic appearance. The gain in weight is quite remarkable. One patient who has been under treatment for the past seven months has gained 42 pounds.

At the beginning of the treatment, in addition to clearing up foci of infection, rest and vaccine therapy, the patient is given daily electric bakes to the joints involved, this quite frequently being a general body bake. Care is taken not to massage the joints or the atrophic surrounding structures until after the acute tenderness and swelling have subsided to a great extent. When the massage is started it is of the most gentle character, care being exerted not to traumatize an already diseased tissue. Manipulation, extensive deep massage and other mechanical devices are only resorted to when the patient is well toward recovery. The fibrositis in some cases persists, and occasionally it is necessary to stretch the member under an anesthetic. Casts are applied but are removed each day for the bake, massage and manipulation.

In conclusion it must be said that the treatment of these cases is as complex as their source of infection. The more thoroughly they are studied the more frequently I believe we will find definite evidence of streptococcus infection.

Unfortunately the streptococcus does not lend itself to the formation of agglutinins or precipitations; consequently serological tests, so far, have failed to give us any definite information. Coley's mixed toxins, when used cautiously and over a prolonged period of time, have in our hands given us a very satisfactory and pleasing result.

1717 Pine Street.

RECOGNITION OF TONSILLAR INFECTION*‡

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In cases of focal infection there seems to be a great diversity of opinion as to the advisability of removing tonsils with the hope of relieving certain symptoms. We all know there are some men who remove all tonsils and others who remove relatively but a few. We have all seen patients who have had their tonsils removed, hoping to gain relief, only to find the infective process was in the teeth or the intestinal tract or elsewhere. We also have seen patients who have had all the teeth removed only to find the tonsils were the cause of their trouble.

At the Jefferson Hospital for the last two years all the old chronic cases in which all sorts of remedies and treatments had been tried with no results have been routinely referred to the Nose and Throat Department for examination and opinion.

In cases suffering from arthritis, neuritis, nephritis, chorea, mental depression, neurasthenia, spondilitis, cardiac involvement, gastric and intestinal disturbances, we have found that regardless of the amount of tonsil present there usually existed an inflammatory zone along the free margin of that portion of the anterior pillar covering the tonsil. We found further, that some of these patients were greatly improved by the removal of their tonsils and others were not. We then began to suspect there was a different cause for the inflammatory zone.

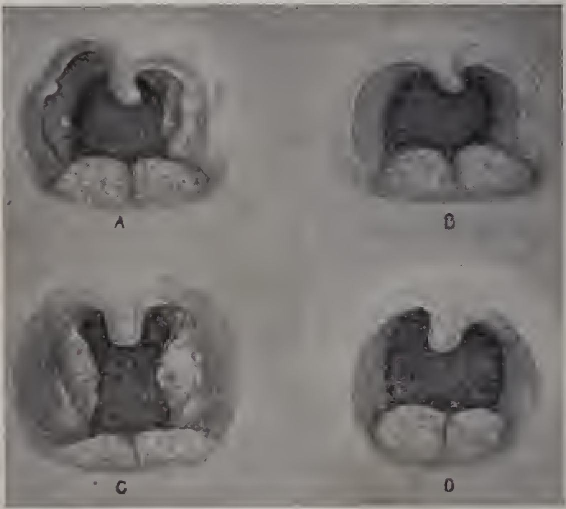
The tonsils removed were sent to the laboratory and cultures made by Dr. B. L. Crawford, who reported the predominating organisms to be streptococci, staphylococci, pneumococci and hemolytic streptococci. These findings correspond to those reported by a number of writers.**

Two questions then arose: First, is there a recognizable difference in the appearance of the tonsils according to the predominating organism? Second, are certain kinds of infective organisms in the tonsils more frequently associated with certain diseases?

After long and careful study of the local appearances I began to think I saw a difference in the appearance of the inflammatory band present by which I could separate the cases into two classes.

Class I. In the cases suffering from arthritis, neuritis, acute rheumatic fever and spondilitis the band of inflammation appeared darker, more purplish in color and narrower with more sharply defined edges (Fig. A). These tonsils were sent to the laboratory and cultured. The culture invariably showed a pure streptococci growth or a mixed growth of streptococci and staphylococci with the streptococci predominating.

Class II. In the other group of patients, those with nephritis, chorea, mental depression, gastric and intestinal disturbances, there was also a zone of inflammation on the anterior pillars but it was lighter, and more pinkish in color and it faded away at the outer edges into the color of the palatal mucosa (Fig. C). We found the tonsils in this group contained staphylococci and streptococci, with the staphylococci the predominating organism.



At A is shown the narrow deep red inflammatory zone on the anterior pillar with sharply defined border, which was found associated with streptococcic tonsillar infection.

At B is illustrated the fauces of the same patient 3 months after the tonsils were removed. It is seen that the inflammatory zone has entirely disappeared.

At C is shown the fauces of a patient with an inflammatory zone on the anterior pillar, less deep in color and fading out into the color of the normal palatal mucosa without the sharply defined border shown at A. This type of inflammatory zone is diagnostic of staphylococcic tonsillar infection.

At D is illustrated the fauces of the same patient one month after the tonsils were removed. It is seen that the inflammatory zone has entirely disappeared.

Lately we have been removing tonsils from patients suffering from chronic skin lesions but as yet the data are insufficient to present.

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*Read before the American Congress of Internal Medicine, Philadelphia, April 4, 1923.

‡From the Department of Laryngology, Jefferson Medical College.

†Operating Chief, Jefferson Hospital.

**Caylor and Beck. Journ. Amer. Med. Asso., Feb. 25, 1922, P. 570.

In 1921, I removed the tonsils from 12 patients, ranging in age from 40 to 68 years, the average age being 50 years, who had had arthritis and neuritis from 1 to 15 years, average 6½ years, ranging in severity from severe pains in one or two joints to total disability. The observations in these cases may be summed up as follows: 1. Their tonsils all showed the narrow, darker band (Fig. A) and were all on this indication tentatively diagnosticated streptococcic infection. This diagnosis was later, in every case, verified by the laboratory. 2. They all made a complete recovery and were still well one year later, justifying the conclusion that the tonsillar infection was really the cause of their trouble. 3. Only one of the 12 cases had ever had a sore throat.

The conclusions herein presented seem quite radical, but nevertheless they seem to me so definite and positive and the two classes of cases so distinct that I feel justified in recording the observations and in asking that a careful inspection and note be made of the (a) color, (b) width and (c) definition of the inflammatory band along the anterior pillar, (d) the symptoms of the patient, and (e) the organisms found in cultures from the tonsils.

I feel confident the observations herein recorded will be corroborated and that it will be granted that the class of bacteria present can be determined by inspection of the peritonsillar inflammatory zone.

PERITONITIS OF UNKNOWN ORIGIN

A CASE REPORT

E. L. ELIASON, A.B., M.D.
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Formerly the term "idiopathic" was applied to those cases of peritonitis in which the origin was unknown. Cases of peritonitis formerly thought to be due to rheumatism and to cold came under this heading. More recently, since it became recognized that peritonitis is always infective, the term primary was applied by Flexner, 1902, to cases in which, as there was no local focus in the abdomen, it was assumed that the infection must have reached the peritoneum by way of the blood or lymph stream. Osler says of this there can be no doubt, further stating that probably 10% of the fatal cases of general peritonitis are of this type. It occurred in 12 out of 106 cases examined by Flexner and in 9 out of 105 cases at the Massachusetts General Hospital (Manahan, 1905). Hertzler states that "the first case belonging to this group was reported by Belier and Hardy, 1864. Bigelow (1872) reported the earliest satisfactory case in American literature of rheumatic peritonitis. Later Leyden, Meunier, Melian and Harrenschmidt reported similar cases." Hertzler also had two cases and states that in all these cases there was first manifest a diarrhea and one is led to suspect a primary intestinal infection passing through the intestinal wall.

It is in the early literature that the great number of cases of so-called idiopathic peritonitis was most reported. Guttman in 1889 reported 82 cases of peritonitis in which 8 were described as idiopathic; Growitz in 1886 found 13 cases of "spontaneous" peritonitis in 867 autopsies. He does not state the cause of death in the entire series.

In the last few years surgeons have seemed loth to record cases in which they could not demonstrate the origin of the infection. Ashhurst states that "idiopathic" peritonitis is no longer recognized, that even if we cannot find the portal of infection, we can at least identify the organism. But at the same time much more stress and attention has been given to the hematogenous and lymphatic origin of the infection when the source cannot be found within the peritoneum after a most painstaking autopsy. Numerous cases have been reported of pneumococcic, influenzal and erysipelatous peritonitis in patients suffering from these infections elsewhere in the body. Several cases have been reported as following scarlet fever. But lately the streptococcus has been found most commonly in the alleged hematogenous infection. DaCosta states that in some cases the peritoneum may contain a point of least resistance and bacteria contained in the blood may reach this point and produce infection. Briese of England states that cases are reported of acute peritonitis associated with nonperforated acute appendicities, nonperforative cholecystitis and three cases of paratyphoid peritonitis in none of which could a perforation be discovered.

With regard to their frequency and their source, Ashhurst states that the microbes most frequently encountered are the staphylococcus, the streptococcus and color bacillus in enterogenous infections, the gonococcus and streptococcus in genital infections and the tubercle bacillus and pneumococcus in those of apparently hematogenous origin.

The most recent contribution on the subject, under the term "metastatic" peritonitis, is by Ruffanner (1922). He mentions 4 cases of fatal peritonitis due to streptococci, secondary to erysipelas in 2 cases and tonsillitis in 2 cases. In Helsingfors, in 18 cases of acute diffuse peritonitis, it was traced to tonsillitis infection.

The above résumé has been made after a most intensive search through the current literature to date. In none of the reports has there been a case of colon bacillus infection of the peritoneum reported as primary, in which a thorough autopsy examination has been given. Furthermore, none of the writers have mentioned the colon bacillus as being a hematogenous cause of so-called primary peritonitis. These two last mentioned facts lead me to present the following case report of a patient on Dr. J. B. Carnett's service, operated upon by the writer:

Pathological Laboratory, Philadelphia General Hospital, Autopsy No. 6,717, performed by Dr. Hartmann, April 22, 1922, 60 hours after death. Name of subject, J. F—; sex male; race white; age 69 years.

Admitted to Hospital April 19, 1922 at 11:15 a. m. Died April 20, 1922 at 12:15 a. m.

Clinical Abstract

C.C.—Pain in stomach.

H.P.I.—Onset April 15, 1922, with chill; pain in back radiating to abdomen. Nausea and vomiting. Pain increased in intensity and localized near McBurney's Point. Daily bowel movement, no cough or expectoration.

P.H. and F.H.—not obtained.

P.E.—Very toxic. Barrel shaped chest; dullness and râles in dependent portions. Heart enlarged, displaced downward and to left. Sounds poor in quality. Pulse irregular, poor volume. B.P.—80-60. Abdomen—no rigidity; marked tenderness over McBurney's Point. Peristalsis decreased. Operation April 19, 1922—local anesthesia. Right McBurney incision; green pus welled up in wound. Nothing found in appendix to account for condition. Gall-bladder, pylorus, duodenum examined through a second incision through upper abdomen and found normal.

W.B.C.—12,000, polys—72, lympho—27, eosin—1%. Urine, trace of albumin, 1020, many hyaline and granular casts. T—97-104, P—?, R—35-50.

Culture of pus—B. coli, from peritoneum at time of operation. Culture taken—bile from gall-bladder. Laboratory reports colon bacillus.

No further search was made for the source of the infection. Patient died 8 hours later.

External Examination

General Statements: White male, 69 years old, measuring 155 cm., and weighing 140 lbs. Autopsy is being performed 60 hours after death; therefore diagnoses are difficult to determine, as many postmortem changes have occurred throughout the body. Marked rigor still present. No bony deformities. Skin over chest and abdomen shows beginning greenish discoloration. Under left eye is small ulceration, rodent in type, with firm indurated edges—evidently rodent ulcer or epithelioma. Subcutaneous and muscle tissues are markedly wasted.

Internal Examination

Abdomen: In the lower right rectus position well out towards iliac spine, recent suture is placed and a drainage tube; also in upper right rectus position recent rubber drainage tube is placed. Externally both wounds are clean. Peritoneal cavity is filled by markedly distended intestines, with brownish, cloudy, purulent fluid odor of colon pus. Moderate amount of exudate over the visceral and parietal peritoneum.

Thorax: Left pleural cavity shows a few adhesions at apex and posteriorly. Right pleural cavity entirely obliterated by dense, firm adhesions.

Pericardial Sac: Shows no gross lesions.

Heart: Weighs 400 gm. Organ is enlarged and flabby. Epicardium shows no gross lesions. Coronary vessels are markedly sclerosed, tortuous, and in places calcified. Myocardium has undergone postmortem change; however, streaks of fibrous tissue can be seen traversing from the epicardium towards the endocardium. Aortic and mitral valves show moderate sclerosis at the bases.

Aorta: Shows moderate sclerosis.

Left Lung: Weighs 690 gm., and measures 24x17x7 cm. Pleura posteriorly, and at the apex covered with fibrous adhesions. Lung cuts with slightly increased resistance, it is markedly congested. Towards center of lower lobe are a few areas of consolidation, evidently beginning lobular pneumonia.

Right Lung: Weighs 710 gm., measures 27x18x5 cm. Same diagnosis and appearance as fellow.

Spleen: Weighs 190 gm. and measures 12x8x4 cm. Organ is firm. Capsule is irregularly thickened and hyalinized; cuts with slightly increased resistance. Cut surface is dark red; evidences of degeneration, postmortem in type; trabeculae prominent.

Adrenals: Show no gross lesions.

Left Kidney: Weighs 185 gm., measures 12x6.5x3.5 cm. Organ is flabby; cuts with slightly increased resistance. Capsule strips readily. Cut surface is pale white in color, vessels are congested, stand out as small pipestems.

Right Kidney: Weighs 180 gm.; measures 12x6x3.5 cm. Same diagnosis and appearance as fellow. Both pelves and ureters open throughout—show no gross lesions.

Gastrointestinal Tract:

Stomach: Is distended and contains a large amount of dark brown fluid. Wall in upper portion of *small intestine* greatly thickened and hypertrophied. Rugae and villi thickened and hypertrophied—a peculiar preserved appearance. Moderate congestion in the lower portion of the ileum. No ulcerations or perforations could be found in any portions.

Appendix: Is small, fibroid type.

Large Bowel: Markedly distended; shows no ulcerations, no evidence of diverticulae or perforation. Serous covering of intestine moderately injected and covered with small amount of exudate.

Liver: Weighs 1,900 gm. Organ is dark green in color, mottled with white. Edges are sharp.

Gall Bladder: Contains dark, muddy looking bile, which on pressure readily runs through common duct and Ampulla of Vater.

Pancreas: Is not enlarged and no evidences of fat necrosis; however, the entire organ is dark and necrotic, evidently due to postmortem changes.

Cultures: Heart blood and from bile in gall-bladder.

Sections taken: Liver, spleen and kidney.

Brain not removed.

Urinary Bladder: No gross lesions.

Diagnosis

Clinical Diagnosis: Acute suppurative peritonitis. Chr. bronchitis. Emphysema. Auricular fibrillation.

Gross Anatomical Diagnosis:

Peritonitis (cause not determined).

Heart: Cardiac hypertrophy; coronary sclerosis; fibroid degeneration of myocardium.

Lungs: Fibrous and obliterative pleurisy; lobular pneumonia and congestion (left); same diagnosis (right).

Spleen: Probable diagnosis, congestion, chronic in type.

Kidneys: Chronic interstitial nephritis—arteriosclerotic in type.

Intestines: Chronic hypertrophic enteritis.

Appendix: Chronic interstitial appendicitis.

Liver: Chronic passive congestion.

330 S. 16th St.

CYSTITIS

A DIAGNOSTIC BLANKET

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Probably more patients drift into grave conditions under the diagnosis of "cystitis" than under any of the other makeshift diagnoses of medicine. It is the diagnosis under which urogenital tuberculosis, pyonephroses, vesical neoplasms, prostatic infections and obstructions, urethral strictures and a host of other conditions masquerade until there is often no hope of cure.

Of all the viscera, the urinary bladder has probably been the most maligned. It has been accused of countless things of which it has been only partly, or not at all, guilty. Left to itself, it is one of the best behaved organs in the human economy. True, it is sensitive and somewhat easily hurt and, like a child, readily develops habits which are often difficult to break; but it rarely, of itself, gets into serious trouble. When the urinary bladder becomes inflamed it is generally the poor victim and almost never the primary offender. When the pernicious influences which have affected it disappear, it very quickly returns to normal if its perversion from normal has not been for too long a period. It is, in a sense rather sturdy, for if it can properly empty itself, it is extremely resistant to infection. It will often withstand a flood of tubercle bacilli from the kidney for months and years without becoming involved. Gonorrheal infection involves only its trigone and in the absence of trauma and very low physical states, it successfully resists practically all other bacterial invasions if there is no disease in associated structures. In brief, the condition we call cystitis, is almost invariably a complication of some other disease process and almost never a disease *per se*.

Cystitis as a separate disease is largely a heritage of medicine's clinical age before the cystoscope "turned on the light." The use of the cystoscope has exposed the error of so many of our older beliefs, and has so thoroughly discounted the value of so-called cardinal urological symptoms as safe guides to diagnosis, as to make us utterly dependent upon this instrument. It has thrown into the discard a host of easy-made diagnoses; it has shown us that symptomatic diagnoses of urological conditions are far more often wrong than right; and most certainly it has told us that primary cystitis is so very rare that it may almost be said to be nonexistent. All this knowledge has unquestionably opened the way to far better, if much more difficult, work in the urological field. It was easy to tell the patient he had a cystitis and to map out the treatment by the use of a piece of litmus paper, a custom which, I very much fear, still holds an unfortunately large portion of the field, for the manufacturers of drugs for physicians still find a large demand for the old "alkaline" and "acid cystitis" tablets and mixtures.

If the demand for these has fallen off very much it can be easily explained by the widespread use of hexamethylenamin. One could with almost as much justice say "misuse," for there are few drugs more widely misused, to the patient's great discomfort.

It was to be expected that we should be somewhat reluctant to part with such an old and tried clinical friend as cystitis, but just as we have gradually given up our equally old friends, "Malaria" and "chronic rehumatism," for every obscure fever and ache, so shall we all have to come over to the newer views of vesical inflammation. In using the word "newer" one does not seek to imply that the status of vesical inflammation has just been determined. The aim is to emphasize the fact that year after year the cystoscopist has had it forced upon him that the more closely he studies his cases the more rarely does he find an inflamed bladder without having to incriminate some other structure as the real offender. So rare did it become to find the bladder solely at fault that the careful, thinking man became very skeptical about the cases for which he found no ulterior explanation. He learned that in such cases it was wise to question his own diagnostic ability rather than to doubt the possibility of there being a cause of trouble foreign to the bladder itself.

It is often the case that those interested in special branches are so busy writing for those similarly interested that they lose sight of the fact that the things of common knowledge to them do not get wide circulation among those in general practice. This is a misfortune well worthy of our best efforts at correction, for no specialty is independent of another and we owe an equal debt to one another. It is our duty to make common knowledge of the things experience and observation teach us, for it is only by so doing that we are going to lower the general margin of diagnostic error. We have not reached as high a plane in this regard as we should and it is hardly becoming to criticise the diagnoses of general medicine when we have not correlated and broadcasted some of the most important things upon which such diagnoses should be based.

That there is need for the wide dissemination of such knowledge is known to every urologist. One only has to compare the usual diagnoses of urogenital cases with the diagnoses based upon complete studies with our instruments and methods of precision to realize that a grave responsibility rests upon him. This is true of many things aside from the question of cystitis; but that this subject is in crying need of attention is illustrated by a study of the twenty cases included in the accompanying table. There is no real necessity for giving only this limited number, for it is a poor urological dispensary that would not furnish a hundred or more. The average time during which these patients were treated under the diagnosis of "cystitis" was over thirty-four months. The underlying causes of the cystitis add a sad commentary on the situation.

One could with truth say that his group of cases is not a truly composite picture, that these were largely the severe cases of persistent inflammation of the bladder and that there were many mild cases of acute cystitis that were not of such serious import. For this reason, let us briefly discuss this phase of the question and we shall see that it in no way changes our contention. In women it is not uncommon to have symptoms of cystitis that are of short duration but close study of which will show that the bladder is again the victim and not the real offender. Perversions of circulation due to pelvic conditions render the mucosa more susceptible to irritation from otherwise trifling causes. The trigone here is usually at fault—very rarely the general vesical wall—and the treatment rests in correction of extravesical lesions and in rendering less sensitive the trigone. That obscure lesion, the so-called Hunner ulcer, would at first seem to be a contradiction, but there is accumulating evidence that this is secondary to a focus of infection elsewhere in the body. There are the cystitides accompanying vesical growths, in which the inflammation might be said to be due to intrinsic causes, but even here the inflammation is a secondary factor. The so-called solitary ulcer, which most of us have never seen, is probably more often tuberculous in nature, and secondary to a renal infection. Many of the milder cases presenting the symptoms of cystitis are not due to true inflammation of the bladder but are caused by trigonal hyperesthesia secondary to some circulatory perversion such as is common in women at the menstrual period and in men as the result of pernicious sexual habits of one type or another.

Thus might we continue to rule out one thing after another until we made more profound our respect for the human urinary bladder as an especially well-behaved organ, singularly indisposed to start any trouble. Once this truth is appreciated, it will be universally held that a diagnosis of cystitis without an effort to learn the true cause is neither a diagnosis nor an excuse but is an incrimination of the one who makes it.

812 Medical Arts Building.

DIAGNOSTIC TABLE

Case	*Treated as Cystitis*	*Underlying Pathology*
A. H.	5 years	Prostatic hypertrophy
R. F. H.	7 years	Renal tuberculosis
M. C.	1½ years	Renal tuberculosis
J. B.	2 years	Renal, vesical and prostatic tuberculosis
A. V.	3 years	Prostatic and vesical tuberculosis
A. F. S.	4 years	Bilateral pyonephrosis
N. S.	3 years	Renal tuberculosis
W. J. M.	5 months	Renal and vesical tuberculosis
J. B. L.	3 years	Large vesical diverticulum
N. M.	8 months	Renal tuberculosis
H. S.	3 years	Bilateral pyonephrosis
S. B.	1½ years	Vesical and bilateral renal tuberculosis
F. A. S.	2½ months	Renal tuberculosis
A. M. T.	10 years	Prostatic and peritoneal tuberculosis
A. W.	5 years	Renal and pulmonary tuberculosis
H. A.	20 months	Renal and vesical tuberculosis
J. H.	2 years	Vesical calculus
F. W.	2½ years	Renal, vesical and pulmonary tuberculosis
A. B.	2 years	Renal and vesical tuberculosis
E. B.	3 years	Renal and vesical tuberculosis

PITTSBURGH ACADEMY OF MEDICINE

ABSTRACTS

CASE REPORTS

DR. B. Z. CASHMAN

CASE I. RECURRENT TUBAL PREGNANCY

Mrs. L. C., aged 41, was admitted December 25, 1922, complaining of vaginal bleeding. Past history was negative except for operation for right tubal pregnancy 5 years ago. Patient has three children, the youngest 16 years of age. Had one miscarriage. Menstrual periods have been regular and the last regular period was November 25th, and lasted 7 days, as usual. A week later, December 9th, suddenly while she was working she started to flow and has been flowing since, over a period of 3 weeks. Severe abdominal pain accompanied the flow.

Examination showed the uterus enlarged and firm, lying somewhat to the right side in the anterior position. There was a tender mass in the culdesac which felt semifluctuant and was very sensitive to touch. Patient kept under observation. Temperature 99, Hgb. 70%, W. B. C. 7,400, B. P. 100/70. Three days later the following note was made: patient's pain had disappeared on rest in bed, temperature and leucocytes normal, some secondary anemia. On examination, an elongated mass is felt inside of the semifluctuant mass behind and to the left side of the uterus.

At operation 5 days after admission, a mass of dark blood and blood clots was found in the pelvis. There was a large, free, rather firm hemorrhagic mass which probably constituted the products of conception at the brim of the pelvis. The left tube was much enlarged and it had been torn through almost its entire length. The left ovary was represented by a shell of hemorrhagic tissue, was closely adherent to the colon. This was carefully separated from the bowel, and tube and ovary were removed. Blood and clots were removed from the pelvis, some in stage of organization. Right ovary was present. Right tube absent. Patient made good postoperative recovery.

Pathological diagnosis was ectopic gestation with tubal rupture.

Interesting points in this case are: recurrent tubal pregnancy, normal menstrual periods with no delay in time of last period, as is usual, but onset of pain and flow one week after last normal period. Diagnosis was made not on the typical history but on the typical physical findings of ectopic pregnancy.

CASE 2. INVERSION OF THE UTERUS OF SEVEN MONTHS' STANDING

Mrs. E. R, aged 26, was admitted May 10, 1923. Chief complaint was vaginal bleeding—7 months. Patient had 2 full-term babies, first still-born, spontaneous delivery. Second born 7 months ago, difficult labor and manual expression of the placenta.

Patient had severe hemorrhage following this delivery and had been bleeding almost continuously since, although she had been doing her own housework. For the first four months, the bleeding was mostly fluid blood, but for the past three months she had passed chiefly clots. No pain in the abdomen.

On examination, patient was very pale and anemic. Abdominal examination was negative. On vaginal examination, vagina was found filled with serosanguineous fluid and a pale blood clot resembling bloody mucus. Patient's hemoglobin was so low that the blood clots seemed to be made up chiefly of fibrin. There was a mass somewhat larger than the normal uterus projecting into the vagina through the cervix. It was covered with pale granulation tissue which bled readily. The cervix was dilated and formed a collar around the base of this mass. A finger could be passed around the groove between the cervix and the mass and at no point was there anv evidence of a deeper cavity, making the diagnosis of inversion of the uterus practically certain. On rectal examination, there was an absence of the uterine body above and a depression could be felt where the uterus was inverted through the cervix. Hemoglobin 25%. Wassermann negative.

Patient was kept in bed and vaginal bleeding became much less. One week after admission, transfusion was done and 4 days later hemoglobin was 40%. Ten days after this, hemoglobin was 60% and patient was operated under spinal anesthesia. It was impossible to reduce the uterus by taxis, so a transverse incision was made through the anterior vaginal wall in front of the cervix and the anterior culdesac was opened. The anterior lip of the cervix was divided in the midline and the incision carried through the anterior wall of the uterus almost to the fundus. The tubes and ovaries were invaginated with the uterus. The uterus was reduced without difficulty and the walls of the incision were found to bulge so that it was necessary to excise a wedge-shaped portion of tissues in order to make a good approximation with sutures. Patient made a good recovery and was discharged from the hospital 4 weeks after operation, at which time the hemoglobin was 70%. Patient is now well and menstruates for three to four days every four weeks.

Inversion of the uterus is usually a postpartum complication and occurs about once in 100,000 cases. It seldom occurs later than 12 hours after delivery. Improper or too forcible Credé's expression of the placenta, traction on the cord, or violent straining are the most common causes, although this condition may occur spontaneously. The most constant apparently causative factor found has been attachment of placenta at the fundus, and this seems to be a factor in producing inversion. In the nonpregnant state, traction of a tumor may produce inversion. In the puerperal inversion of the uterus, hemorrhage and shock are the chief symptoms. Shock without evident hemorrhage after delivery should suggest possibility of inversion of the uterus.

CASE 3. FOREIGN BODY STONE IN THE COMMON BILE DUCT

Patient, aged 44, was admitted August 10, 1923, with history of pain in the upper right abdomen. Patient had an appendectomy 7 years ago, and was operated 5 years ago for gall stones. Cholecystectomy was done. At this time, no stones were found in the common duct but there were many stones in the gall bladder and many adhesions present. Patient has had some discomfort at times in the upper abdomen since operation, but this was not severe until the middle of January, 1923, when there was an acute attack of pain in the epigastrium which lasted for one hour and was quite severe. Patient vomited at this time. He had similar intermittent attacks after this until 6 weeks ago, when there was a severe attack followed by jaundice for the first time. Intermittent attacks of severe pain during the last 6 weeks until August 8th, when there was another severe attack which persisted until admission. Pain begins in the right upper quadrant, radiates to the shoulder, precordium near the sternum, and the right iliac fossa. Stools have been clay colored and urine very dark.

Examination showed patient markedly jaundiced with generalized rigidity in the right hypochondrium and epigastrium. W. B. C. 18,000, temperature 100.5, pulse 100, B P. 128/80, coagulation time 6 minutes. History of intermittent attacks of severe pain with jaundice makes diagnosis of stone in the common duct most likely. X-ray showed an increased density in the region of the gall bladder suggestive of biliary calculus. Patient's pain and jaundice gradually subsided and operation was done 2 weeks after admission, a large stone being removed from the common duct which was much dilated. Stone was 1 inch long and 1½ inches in diameter. A probe readily passed into the duodenum. No other stones were found. Tube was sutured into the common duct and the incision closed.

On examining the stone, Dr. Bruecken, the pathologist, found a ligature with knot forming a nucleus of the stone. In communicating with the surgeon who did the previous operation, it was learned that the cystic duct had been ligated with linen.

The practical lesson from this case is that as silk has been discarded in gastro-enterostomy because of ulcer formation, and in the gall bladder and urinary bladder because of stone formation, so this case is an argument against the use of nonabsorbable material for ligation of the cystic duct in cholecystectomy.

FOCAL INFECTION; CASE REPORTS

DR. STANLEY SMITH

Case 1: F. R., aged 70, was referred for cataract extraction. Examination revealed senile cataract, mature, with good light perception and projection, and a catarrhal conjunctivitis. The smears showed many gram positive cocci. It being inadvisable to operate under such conditions, treatment of the conjunctivitis was instituted with but little improvement. After five weeks, his condition being no better, he was advised to have his badly decayed teeth removed. The removal of these teeth was followed by a gradual improvement in his conjunctivitis and, obtaining several negative smears, he was operated upon successfully two weeks ago.

Case 2: April 22, 1922. J. R., aged 35, machinist, an unusually fine specimen of physical manhood, complained of his right eye becoming progressively uncomfortable for the past three months. Examination showed a small phlyctenular ulcer of the cornea with the usual attendant conjunctivitis. The iris was not hyperemic. This condition quickly disappeared and he was not seen again until September of the same year, when he stated that vision of the right eye had been defective for the past three weeks and was much worse for the past 5 days. He was found to have a central opacity of the cornea, fairly deep in the stroma with marked pericorneal injection and mild hyperemia of the iris. There was no pain and the cornea was found to be almost insensitive.

Vision was reduced to 5/60—less than 1/10 of normal. Local treatment was started and the usual search for the infective focus begun. Wassermann, tonsils and nasal sinuses were all negative, but dental examination showed pyorrhea and the x-ray revealed several defective teeth. The condition was so obvious that there was no hesitation in advising the immediate removal of the defective teeth, which was done. This was followed by marked improvement in the eye. Two months later the iritis returned in a severe form. Corneal sensibility was normal. After consultation with his dentist, all teeth that were in the slightest degree suspicious were extracted, which was followed by a most happy result. His vision, when last seen in March of this year, was normal.

Case 3: January 26, 1922. Miss J., nurse, aged 26, complained of pain and blurring of vision in left eye for the past three days. The eye was tender on palpation, there was a moderate amount of pericorneal injection and the pupil was active with very little hyperemia of the iris. Scopolamin was instilled, but the next day she was much worse. Questioning revealed that she had had an attack of diphtheria a few weeks before, followed by myocarditis and pain in the shoulders and knees. She was well nourished and healthy in appearance. Her upper right first molar was discolored, the adjacent gum swollen and draining pus. Immediate removal was advised and within an hour she handed me the tooth, which had a dentist's burr protruding from one of the roots. This had been there some months. Her iritis was very severe for three days following the extraction and then subsided with unusual rapidity. Her joint-pains disappeared at the same time. There has been no return of any trouble since. Frederick B. Utley, M.D., Secretary.

"FRIENDS OF MEDICAL PROGRESS"

In the face of the astonishing modern advance in medical knowledge that has come as the result of well organized scientific experimentation, a remarkable phenomenon is presented by the activities of certain organizations, which have endeavored to obstruct such advance by perverting the truth, misleading the ignorant, and endangering the public welfare. Leagues organized to assure individual freedom, however dangerous that may be to community health, cults laboring to lower the standards of medical education and practice, antivaccination societies striving to abolish a well demonstrated protection against a devastating disease, and opponents of animal experimentation, doing their utmost to check or stop an essential method of medical progress, are striking illustrations of such efforts.

The perils that lurk in such mischievous propaganda have been augmented in recent years by placing the decision on scientific matters on a popular vote. By specious arguments for personal liberty, by subtle appeals to tender emotions and kindly sentiments, many voters have been led to oppose well founded measures for the protection of the public health. Physicians have repeatedly pointed out these perils. Practically, however, our profession is not favorably placed to oppose them. Physicians who denounce the exploiting of the public by ignorant and ill-trained charlatans, or who vigorously support medical measures for the promotion of individual and community hygiene, are often charged with selfish motives—they are supposed to be looking out for their own welfare and using the public welfare as a facade. Even if the unjustness of this view were recognized, physicians and health officers have neither the time nor the financial backing required to oppose effectively the fanatical campaigns constantly being waged. After all, intelligent laymen are quite as responsible for public security as are the members of the medical profession.

Under these circumstances, it is highly gratifying to note the creation of a national lay organization—the "Society of Friends of Medical Progress." The object of this society is "(1) to encourage and aid all research and humane experimentation for the advancement of medical science; (2) to inform the public of the truth concerning the value of scientific medicine to humanity and to animals; (3) to resist the efforts of the ignorant or fanatical persons or societies constantly urging legislation dangerous to the health and well-being of the American people."

The honorary president is Charles W. Eliot, ex-president of Harvard University; among the vice-presidents are James R. Angell, president of Yale University; Right Rev. Alexander Mann, bishop of the Episcopal Diocese of Pittsburgh; Cardinal O'Connell of Boston; Ellen F. Pendleton, president of Wellesley College, and Hon. Charles E. Hughes of Washington, D. C. The acting president is Thomas Barbour, the naturalist. Ernest Harold Baynes, whose articles on the value of vivisection to mankind and the lower animals have done much to popularize professional information in this subject, is the field secretary.[1]

This new organization appears at an opportune time, when widespread and dangerous movements are afoot to discredit scientific medicine, to procure legislation that would prevent the progress of medicine and surgery, and to destroy the bulwarks of preventive medicine and permit the incursion of diseases now held in check. The "Friends of Medical Progress" is to be a national society: if it spreads as a strong organization throughout the United States, it should perform a highly important function hitherto assumed with difficulty and with sacrifices, as a civic duty, by the medical profession.—*Jour. A. M. A.*, Oct. 27, 1923.

THE CULT OF ABRAMS AND THE SCIENTIFIC AMERICAN

The "Electronic Reactions of Abrams"[2] are being investigated by the *Scientific American*. While *The Journal* is still of the opinion, expressed several times, that the whole scheme is so preposterous a fake as to stand self-condemned, yet, there are, presumably, some people who demand demonstrable evidence of the fact that the moon is not, and never was, made of green cheese. A preliminary article regarding the investigation to be undertaken by the *Scientific American* appeared in the October, 1923, issue of that publication. The first test to determine the accuracy of the "Electronic Reactions" diagnosis is reported in detail by the managing editor of the *Scientific American* in the current (November) issue. It makes amusing reading. Six tubes of pure germ cultures were submitted to an Abrams disciple with the request that he identify the cultures. The first tube was a pure culture of typhoid. The Abramsite diagnosed it as "acquired syphilis, congenital syphilis, tuberculosis, gonorrhea, pneumococcus, malaria and influenza," but failed to diagnose typhoid. The second tube was a pure culture of pneumococcus. The "ERA" ("Electronic Reactions of Abrams") gentleman diagnosed the contents of this tube as "congenital syphilis, tuberculosis, gonorrhea, malaria, influenza and colon septecemia," but did not find what it really was, pneumococcus. The fourth was a tube containing a pure culture of tetanus. It was diagnosed as "malaria, influenza, colon septecæmia and diphtheria," but not tetanus. The sixth culture was of diphtheria. The Abrams wizard found "congenital syphilis, tuberculosis, gonorrhea, pneumococcus, malaria and colon septecemia." And so it went. When the Abrams disciple found that he was falling down hopelessly he began casting around for excuses. Looking at the vials which he had already tested, he discovered for the first time that the labels had red edges and bore blue handwriting. This catastrophe chromatic combination, naturally, shot the "ERA" all to pieces. The disciple explained how, quite recently, he had obtained very unsatisfactory results all one morning to find later that the cause was due to his "subject" (the healthy individual whose abdomen is percussed) having a piece of red cardboard, a theater seat check, in his trousers pocket. However, the *Scientific American's* committee removed the red bordered labels with the blue handwriting and subtituted a set of plain labels prepared on the typewriter; but the diagnostic results were no more satisfactory than before. It may be said in closing that Albert Abrams has disowned the disciple who flunked the tests as not being a Simon Pure hundred percenter and has promised the *Scientific American* to give a personal demonstration "some time in the near future, if time permits." The whole thing is very funny and very foolish."—*Jour. A. M. A.*, Oct. 27, 1923.

BARTER IN MEDICAL DIPLOMAS

Elsewhere in this issue appears an account of the ease with which an impostor obtained a degree in medicine and a diploma in osteopathy, and arranged to have his state examination taken by an impersonator. Another item refers to an exposé of a notorious ring of diploma-venders now being carried on by the newspapers of St. Louis and Kansas City. For several years there have been occasional indications of the existence of this ring of diploma-venders; of late they have been less discreet in their methods. Now their manipulations are being exposed, but there are doubtless others who will promptly take up the business where these have left it. The important thing is that adequate safeguards are being established which will prevent the use of such diplomas. In fact, the diplomas already sold are scarcely worth the paper they are printed on. Even had such diplomas been obtained by bona fide students, they would be almost worthless owing to the extremely low grade of the institution granting them. At this time the diplomas sold will admit their holders—or possibly their impersonators—to the licensing examinations in only three states, Massachusetts, Wyoming and Connecticut, and the District of Columbia, and even in these states, the door will be closed just as soon as practice laws will give the licensing boards the needed authority to close them. The time is quite near when purchasers of medical diplomas will not be able to secure a license in any state of this country and when the diploma-venders will be forced to seek some other calling.—*Jour. A. M. A.*, Oct. 27, 1923.

THE COMMON COLD

The etiologic agent in the production of the common cold has been singularly elusive. The disease—if it deserves this imposing designation—is a mild one in man. There are few, if any, significant constitutional reactions from it, and consequently it is not easy to ascertain whether the malady has been transmitted in animal experimentation. For this reason, attempts to infect animals with the common cold of man have borne little fruit of the nature of positive achievement. Efforts to transmit the possible incitant directly to human subjects, though few, have been somewhat more promising. The latest of such trials, conducted by Olitsky and McCartney[1] at the Rockefeller Institute for Medical Research, indicate that the incitant is a filtrable agent obtainable from the nasopharyngeal washings of patients during the very early hours of the onset of the symptoms. At least, with such filtrates the symptoms of common cold have been transmitted to a number of healthy persons. Transmission failed in cases in which the "colds" were caused by exposure to the elements, or chilling of the body, and not by definite contact with other cases of common colds. Evidently there are colds and colds; but it will be an unmixed blessing when the cause of any brand of these

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[1] The organization may be addressed as The Society of Friends of Medical Progress, 28 Newbury Street, Boston.

[2] A reprint of the matter that has appeared in The Journal on the Abrams vagaries will be sent on receipt of five cents in stamps.

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[1] Olitsky, P. K., and McCartney, J. E.: Studies on the Nasopharyngeal Secretions from Patients with Common Colds, J. Exper. Med. 38: 427 (Oct.) 1923.

commonest sources of malaise can be captured, properly indicted, and then promptly executed.—*Jour. A. M. A.*, Nov. 17, 1923.

THE GROWING IMPORTANCE OF PREVENTIVE MEDICINE TO THE GENERAL PRACTITIONER

If the medical profession is to retain in the highest possible degree the confidence of the general public, John M. Dodson, Chicago (*Journal A. M. A.*, Oct. 27, 1923), says it must recognize changing conditions and alter its methods of practice accordingly. In doing this the profession must constantly seek to meet the real needs and serve the best interests of the public. Unquestionably, the greatest possibilities of usefulness of the physician to the public lie in the field of preventive medicine. The family physician who seeks to render to his patients the service which will do them the most good is bound to enter the field of preventive medicine: to become, in other words, the family health adviser as well as the family physician. The idea that seems to be entertained by some physicians that the physician is the only man who is competent or has the right to discuss matters of health, Dodson says, is wholly erroneous. He is better qualified to assume leadership in many phases of this movement, but it is the height of folly for him to decline to coöperate cordially and continuously with several other agencies that are working in this field. It is his right to insist that the activities of each of these groups of workers be confined to the domain for which their training has fitted them. Physicians must equip themselves far better than they have been heretofore equipped to give instruction to the public concerning community and especially individual hygiene. They must coöperate cordially and effectively with the duly appointed health officers, not only in complying with the legal requirements as to the reporting of births, deaths, cases of communicable disease, and the like, but in the matter of arousing the citizens of the community to the importance and great possibilities of preventive measures. Training of the family physician for such work can be accomplished only by a considerable amount of carefully planned, systematic, effective instruction along the lines of preventive medicine. We need extensive provision for continuation courses conducted by state or local health officers at convenient points and for such periods of time as will make it possible for the family physician to attend them without unreasonable interference with his practice. One thing is certain—the health officers, community, state and federal—are hopelessly handicapped unless they have the cordial, constant, sympathetic and intelligent coöperation of the physicians of that community. For the coming generation of medical men, that is, the medical student of to-day, the plan of education must be modified to stress the preventive side of medicine much more than it has ever been stressed. The practitioner of medicine must have a reasonably broad, comprehensive knowledge of medicine; first, of the fundamental sciences on which the practice of medicine is based, and then of the clinical applications of these sciences. The foundations to be laid in these sciences are essentially the same for preventive as for curative medicine. Somewhat more emphasis should be laid on those facts and methods of bacteriology and hygiene which have to do with prevention; but the important change that is needed is a change in attitude of the clinical teacher. The medical faculty and especially the clinical teachers of every medical school should come to realize that the medicine of the future is to be in large part preventive medicine, and it is their duty to prepare their students for service along these lines.

BUBBLES

Curious that at Pittsburgh, the home of the 57 Varieties, 57 counties were represented at our 1923 meeting.

Here's hoping the new Ford party won't prove to be only a flivver.

Most patients are like a swinging door; it depends on who pushes the hardest which side they will swing to—the regular or the quack.

If the doctor cannot be persuaded to move to the country, we shall have to devise some means of moving the country to the doctor.

The safe and sane Fourth seems to work well; how about a safe and sane Halloween next? And a safe and sane Christmas?

If you don't come across with a contribution to the Medical Legislative Conference this year, next year your legislative representatives will be met with "Yes, we have no bananas," for the quacks will have carted them all off.

It's a wise worm that knows when to turn.

The legislative crop is like winter wheat—it must be planted the season before.

Isn't it queer that the fellow that's always kicking rarely puts his shoulder to the wheel and pushes, while the fellow that does the pushing seldom has time to stop and kick!

Some folks that we know act as if they had corns on their dispositions.

A fat man called at a surgeon's office the other day to ask if the doctor could cut out his appetite. "No," said the surgeon; "but I can amputate your pocketbook, which will as a natural consequence inhibit the appetite."

The old-fashioned doctor used his common sense. Has the new-fashioned doctor substituted laboratory tests?

The reason why golf is so popular with the doctors is that they can use the energy swatting the ball that they would like to use on some of their hypochondriac patients.

If we had all the paper used in medical books that aren't read, the paper shortage wouldn't need to worry us any.

We hear that a certain doctor the other day requested a flapper to remove her rouge, as it blinded him so that he could not see to examine her properly.

The impunity with which the modern woman braves the elements with rubberless shoes would lead one to believe that the old-fashioned folks made too much of a fetish of their feet.

Dr. O. Pine queries: Would it not be a good idea to have a medical commission constituted which shall inquire constructively into the frightful prevalence of *aphonia medicorum* among speakers at state society meetings?

Dr. O. Pine queries: Was Reading selected with a view to better platform *reading?*

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EDITORIALS

THE LIMITATION OF HONESTY

The daily recording of failures by brokers, etc., and the embezzling of money by bank officials, leads one to the belief that the limitation of honesty is a subject which has gone beyond the stage of discussion by psychologists. It is now a practical matter, and far more than a question of ethics. The cynical too long have been permitted to harp sneeringly upon the idea that every man has his price, and that a bribe always is successful if it is big enough. Others have not dared to agree with them because it strikes a blow at self respect. No one cares to acknowledge that human nature is the weak thing we find it, and we must believe that at least some men are incorruptible and above suspicion. Physicians meet man in his hours of weakness and see the bad traits of character even more than priests in the confessional, and are more competent than any other class of citizens to sound a warning. Every thinking man knows that average men are incorruptible just as long as it pays to be so. The Chinese are looked upon as very dishonest, yet when it is to their interest to be honest, they can be trusted implicitly.

Too much money may be entrusted to the average man, for in spite of the safeguards thrown around corporations, we are almost daily furnished with the accounts of the defalcations of men long trusted. There is then a suspicion that the huge combinations due to modern business methods have progressed beyond human capacity to manage them. F. C. H.

THE JARISCH-HERXHEIMER REACTION

In untreated syphilitic patients in the acute eruptive stage, there occurs an accentuation of the eruption within twenty-four hours, usually a few hours after the initial administration of one of the arsphenamins. Such accentuation is noted in all patients treated intravenously with a full dose of the drug; it is less likely to occur after a smaller dose and can be entirely avoided by the initial injection of a very small dose. With the accentuation of the eruption there may be fever and constitutional symptoms. This phenomenon is known as the Jarisch-Herxheimer reaction.

This reaction, originally described by Jarisch in 1895, later by Jadassohn, was a local one—an accentuation, reddening and swelling of the macular and papular rashes occurring within twenty-four hours after the initial use of mercury, administered in sufficient quantity either by inunctions or intramuscularly.

Before the advent of arsphenamin, Herxheimer and Krause in 1902, were the first to write comprehensively concerning the reaction and to suggest an explanation as to its pathogenesis. They regarded it as due to the action of mercury on the hypersensitive diseased cell. They pointed out the diagnostic value of the reaction.

Its occurrence following the advent of arsphenamin was given as a further proof that this drug exerts a powerful direct effect on the spirocheta pallida.

Experimentally, the reaction is seen as an enormous swelling of the syphilitic testicle of a rabbit following the initial injection of the therapeutically active dose of one of the arsphenamins.

Ehrlich's explanation of the Herxheimer reaction is perhaps the present-day conception of this phenomenon, that is, it arises from liberation of toxins resulting from the lytic action of arsphenamin on the spirocheta pallida.

Another explanation of the Herxheimer reaction is based upon experimental studies, notably of Heinz and of Hoppe and Schreiber, on the results of introducing arsenic into the circulation of animals. Arsenic thus administered is a virulent vascular poison, producing its effects both locally on the neurovascular endings, the endothelium, and the clotting power of the blood itself, and centrally on the vasoconstrictor center, paralyzing this and exalting the functions of vasodilatation. Hyperplasia and stasis on the venous side are the invariable sequelæ and lead to death from cerebral anemia. Vascular damage in the pancreas and mesentery of rabbits have been studied by Hoppe and Schreiber and others, and the results have suggested a new and more scientific explanation of the Jarisch-Herxheimer reaction than that which would assign its appearance to a surplus of surviving spirochetes and their endotoxins. The vasotropic action of arsphenamin is more marked where the organ observed is first artificially damaged (e. g., ligature of the pancreatic duct), and it is suggested that the local lesions of a syphilitic roseola are *loci minoris resistentiæ,* in which the additional vasotropic influence of the drug would cause exacerbation of the already existing vascular dilatation.

Besides the foregoing described "local" reaction, Neisser mentions a "general" one after treatment with arsphenamin, which is characterized by transitory increase of the headache in cerebral syphilis, and of the lightning pains in tabes.

At the present time the term "Herxheimer reaction" is used in a still more general way than Neisser's "general" reaction. It is given as the explanation of the "provocative" Wassermann reaction. It is used to explain local reactions other than in the original sense; for instance, a rupture of an aneurysm following the administration of arsphenamin, or acute yellow atrophy of the liver subsequent to jaundice and arsphenamin therapy. The Jarisch-Herxheimer reaction may be called an expression of the "heavy artillery" action of arsphenamin, and from this view is a vicious reaction. Its presence is prognostically of bad significance and should be avoided in the arsphenamin therapy of syphilis.

There is apparently an increasing tendency to treat syphilis exclusively with arsphenamin. This is probably not the most rational method of treatment for all periods of the disease, and particularly in the stage of acute manifestation. The most rational treatment of the disease at this period is one which will minimize the possibility of the occurrence of the Jarisch-Herxheimer reaction, namely, the thorough and sufficient administration of mercury or bismuth preceding the use of arsphenamin. (See editorial, The Treatment of Syphilis with Bismuth, PENNSYLVANIA MEDICAL JOURNAL, January, 1923.) Soon after the advent of arsphenamin the preliminary administration of mercury preceding the employment of arsphenamin was advocated by many writers. For example, Altman and Dreyfus recommended two weeks' inunctions with mercury before starting the use of arsphenamin and Gennerich advocated the administration of 4 to 6 intramuscular injections of calomel before the administration of arsphenamin.

In lieu of the foregoing the initial administration of a small dose of arsphenamin should be employed in the stage of acute manifestations, and then the persistent administration of the drug in courses rather than the haphazard "now and then" method is to be preferred. The baneful action of irregular or lapsing treatment with arsphenamin is well known. Such treatment greatly increases the incidence of early neurosyphilis. This has been well shown in a recent clinical study conducted by Moore.

Irregular arsphenamin therapy, particularly in the early period of the disease, in all probability inhibits the consummation of immunologic responses of the host to the parasite, and doubtless produces a condition analogous to that existing in the primary incubation period, in which there are spirochetes and no immunologic reaction. This view is substantiated by the work of Brown and Pearce on experimental syphilis in rabbits.

On the other hand, frequently repeated small doses or graduated doses of arsphenamin are probably potent of harm, in view of experimental data which lend support to the belief that it is possible to produce an arsenic-fast strain of spirocheta pallida in rabbits by treatment with small and ascending doses of arsphenamin.

For the convenience of those who may wish to study this subject more fully the following references are appended:

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J. V. K.

PREVENTIVE MEDICINE

In line with preventive medicine as related to the prevention of typhoid fever, we feel that laws should be passed prohibiting a person recently recovered from typhoid fever from engaging in industrial occupations of any sort that are directly or indirectly connected with the handling or preparation of foodstuffs. This would include waiters, farmers, dairymen, grocery clerks and others. A. C. M.

SYMPTOMS FOLLOWING EXPOSURE TO THE X-RAYS OR RADIUM

As far as general observation goes, the action of the x-rays or radium is without any sensation whatever. Therefore, to patients it is a great mystery, and because of this mysterious action, patients and sometimes physicians ascribe to the x-ray examination or treatment every symptom which follows. Very generally this is wrong, and as a result patients go on suffering because the real cause of the symptoms has not been found. One should not lose sight of the fact that a person who has been exposed to radiation is just as liable to develop symptoms, from whatever cause, as is one who has had no such exposure.

Radiologists are annoyed by complaints of the most unreasonable symptoms which are attributed to the x-rays. An example of such ridiculous complaints is the following: A patient in Philadelphia consulted one of the leading jewelers, on account of stones being loose in her finger ring. He asked what she had been doing. She said, "I have been taking x-ray treatment." He said, "That is the cause." And the patient believed him.

To-day, with modern technique, the amount of exposure involved during x-ray examination is so slight that there should be no symptoms as a result, either local or constitutional, and any symptoms or sensations complained of by the patient are either due to the imagination or are being caused by some other conditions and are only coincidental.

The symptoms following exposure of the x-rays or radium for therapeutic purposes are rather definite in character, but they only occur rarely. When the exposure is made for local effects upon the skin or superficial tissues, there are no constitutional symptoms and when the patient complains of symptoms the physician should search for the real cause instead of following the example of the patient and ascribing everything to the x-rays or radium.

Occasionally a reddish blush will follow an x-ray treatment within a few hours. The cause of this is unknown and it always disappears without treatment within a few hours.

Rarely, when a patient is treated about the face for some condition such as acne, there will be a swelling of the paratoid, which may simulate mumps. The cause of this is unknown. It is probably due to some electrostatic effect rather than the x-rays. This swelling disappears within a few hours or by the next day and is of no consequence.

In the treatment of deep-seated cancer by the x-rays or radium, when a large amount of radiation is used the patient may develop radiation sickness. This is especially liable to occur in about one-fourth of the cases, when the high voltage x-rays are used. In part, this is due to effects of the rays on the cells. In part, it is due to action of the high tension currents on the air of the room. (The latter effect can be avoided.)

The symptoms of radiation sickness are malaise, nausea, sometimes vomiting. Fresh air, plenty of water and symptomatic treatment will usually give relief within a few hours or days.

All other symptoms which may arise are probably caused by some coincidental conditions and should be treated accordingly. The radiation sickness, when it occurs, must be accepted as the lesser of two evils, for it only occurs when one is treating deep-seated cancer or some other serious condition. G. E. P.

MARRIAGE IN CASES OF TUBERCULOSIS

Marriage in cases of tuberculosis must, in view of such direful consequences, be most earnestly deprecated when either individual is infected, however beautiful and sentimental may be the argument that a married consumptive has better care and nursing than one unmarried. Another powerful argument against marriage is the inherent right of every child to be well born, physically as well as morally, and not to be doomed to come into life poisoned by tuberculous toxins imbibed from the tissues of the parents, the host of myriads of tubercle bacilli transmitted through its umbilical vessels. On the other hand the drain of pregnancy and parturition exhausts the vitality of the woman so seriously that her death is frequently hastened many months, and a pulmonary disease that might have been arrested, becomes incurable. In fact so pernicious is the influence of tuberculosis upon the course of pregnancy and upon the fetus, that the question of the feasibility and expediency of interrupting pregnancy in a tuberculous woman frequently arises. If the woman is a Catholic of course the Church will not sanction such a procedure. In any patient where interruption of pregnancy is being considered, it is doubtful if any good will result, if done after the fourth month of gestation.

The chief reasons why the tuberculous should not marry are these facts: that 30% of the cadavers of the tuberculous show urogenital lesions; that gonorrheal epididymitis has a special tendency to become tuberculous; that an enormous percentage of the wives of tuberculous men develop tuberculosis; and that the offspring of such parents often present anomalies of weight, growth and nutrition, if not decided congenital disease. Hence, without usurping the innate right of the individuals to decide such questions for themselves, it is plainly the duty of the physician to explain the dangers of matrimony under such conditions, and to urge single life upon those unfortunates contemplating marriage.

It always will be impossible to get rid of the disease entirely, but if it were generally known how serious may be the consequences, the number of infections no doubt would be much less. The education of the public in this respect is chiefly in the hands of the medical profession. Have we been doing our duty in this respect? Since the World War, much has been done by permitting lectures on venereal diseases in the schools, churches, etc. F. C. H.

RECENT BIRTH CONTROL CONFERENCE IN CHICAGO

"The American Birth Control League, Inc.," and "The Voluntary Parenthood League" are both organizations formed of enthusiastic altruists and social workers. Both believe that the first right of the child is the right to be wanted; that it is the right of the wife to choose when she shall become a mother; and that neither of these axioms would make for immorality in this country even as they have not done so in those European countries where birth control has been officially recognized and approved for many years. Holland, for example, claims more rapid increase of population, marked lowering of infant mortality, a noteworthy increase of physical efficiency and longevity, a diminution of illiteracy, vagrancy, etc., after forty years of legalized birth control. Sociologists have long averred that early marriages of the working classes were imperative. Syphilographers have urged the same necessity. The Birth Control League believes that birth control clinics should be maintained under the direction of the medical profession wherever the present laws are not prohibitive (that is, in New York, Illinois, Colorado, Ohio and Georgia), and that these clinics, besides affording immediate relief to unjustly suffering women, will create public sentiment and overcome antiquated prejudice quicker and more surely than any other form of propaganda. The League believes that in this way state legislatures can be influenced best and state laws eventually made to conform to modern ideas of civilized sociological progress, in all the states of the Union.

The Voluntary Parenthood League has focused its attention on opening natural channels for the dissemination of legitimate useful information, both to the medical profession and to the public; and to that end has set about having the Federal laws changed so that contraceptive information would not be banned as obscene, as it is at the present time, whether coming from physician, or from social worker, whatever the urgency of the need. Their Federal bill has been printed and is in committee, and its proponents feel that they have very strong backing and few opponents.

The Birth Control League has just concluded at Chicago a very successful birth control conference for the middle western states. Besides ethical and sociological sessions, at which the attendance reached as high as 1,500, they had a meeting for the medical profession alone, at which about 1,200 doctors were present. The discussions were intelligent and enthusiastic. As has been repeatedly pointed out in all discussions of this problem, the most undesirable citizens are the most given to irresponsible procreation. Our hospitals, asylums, and prisons are thus filled and public moneys are diverted from more worthy and profitable ends to the support of these undesirables.

The League does not exaggerate when it calls attention to "the appalling waste of women's health and women's lives by too frequent pregnancies, the multiplying of child workers and the deterioration of child life thereby, and the lowering of standards of living." Ministers of all Protestant denominations and of the Reformed Hebrew Church were present at the Chicago meetings.

Each of these birth control organizations publishes a journal—*The Birth Control Herald* and *The Birth Control Review*. Each organization needs money. There is no better investment.

Medical schools seem to have overlooked this subject. In many states they cannot legally mention it. The medical profession is strangely indifferent to its obligations in this regard. The physicians of Chicago have set an example to their brothers of other states. Several scientific works along this line by competent American physicians are ready for the press and only await the removal of the absurd legal obstacles which stand in the way of their publication. Let us do what we can for this much needed legislation. Let us seize every opportunity to combat the ignorance and prejudice which prevent the application of modern scientific ideas to sociological work.

We have referred to the need of the voluntary regulation of parenthood and to the propaganda for more intelligent legislation as to contraceptive teaching. There is furthermore a great need of state regulation of parenthood applied to criminals and mental defectives. This is a part of the great problem of birth control.

Undesirable citizens may be the product of too frequent pregnancies, insufficient food and bad environment; but a large proportion of the undesirables that fill our prisons, almshouses and asylums, are the result of bad heredity—the procreation of psychopathic criminals and of mental defectives.

Rasanoff says, "Mental health is purchasable." The purchase money must be spent in eliminating as far as possible "bad heredity."

The advisability of sterilizing certain types of criminals cannot be disputed. The classification of criminals and the standardization of methods are in process of evolution. The segregation of idiots, imbeciles, feeble-minded, and epileptics, during the child-bearing age is a state need, well established on humanitarian, sociological and financial grounds. No more startling example of a "penny-wise and pound-foolish" policy has ever been imposed upon a fairly intelligent public than our present executive has imposed upon Pennsylvania under the guise of economy. An estimation of the effects of this policy on future generations in Pennsylvania is appalling.

L. L.

PIONEER PHYSICIANS OF PENNSYLVANIA

THE LYCOMING DISTRICT

Dr. James Dougal, the first, was born in Londonderry, Ireland, on the fourth of June, 1769. His father, who was a farmer in comfortable circumstances, gave his son a liberal education and when quite a young man sent him to America to look after some land he had purchased in Cumberland County, Pennsylvania.

The ship in which he sailed, "The Royal Stewart," was wrecked on the Jersey coast and most of the passengers were lost. Dr. Dougal, who was an expert swimmer, reached land, safely, and was able to render efficient aid to a young friend who was almost exhausted when he went to his rescue.

The wreckers stripped them of all that was worth taking and left them destitute and forlorn strangers in a strange land. In this situation they were found by a gentleman living somewhere in the vicinity, who after conversing with this young Irishman and learning of his history, sent for a priest to examine him in Latin and Greek; and, finding him fitted for the position, employed him as a tutor to his son.

After remaining some time in America he returned to Ireland, studied medicine and graduated from the University of Edinburgh, Scotland, in 1791 or 1792. On the 14th of October, 1793, he was married to Miss Jane Starratt and settled in Cookstown, County Tyrone, Ireland, and practiced medicine there for several years. While living there he joined the "United Irishmen," under the leadership of Robert Emmet, in their endeavor to free their land from British rule. After several encounters with the English troops, the Irish were finally defeated at the battle of Vinegar Hill in 1798.

Dr. Dougal, after this defeat, escaped to the seacoast and a second time set sail for America. He landed at Philadelphia, and from there went to Northumberland, where he made the acquaintance of Dr. Joseph Preistley and his son. Acting on their advice, he located in Milton, Pa. Here he bought a home and commenced the practice of medicine.

Mrs. Dougal and her two children, James and Margaret, reached America either in the fall of 1798 or early the next year. Their voyage was rather an eventful one. The ship in which they sailed was so long on the way that the supply of provisions and water ran low and the passengers were put on short allowance. Fortunately they were overtaken by a French vessel bound for the same port, the captain of which supplied them with food and water, and took Mrs. Dougal and her children on board his own vessel. When the ship entered the Delaware River, the captain learned that yellow fever was raging in Philadelphia, so he landed his passengers at New Castle, and from there Mrs. Dougal made her way to Milton by private conveyance.

In the meantime, the doctor had gone to Philadelphia, expecting to meet his family there; but after waiting some time and hearing no tidings of them, he started on his return. Fortunately he overtook them on the way and escorted them to their new home.

The house in which they lived for some years was a little log building, standing on the site where, in 1803, he built the large stone house now owned and occupied by his grandson, Dr. C. H. Dougal. Dr. James Dougal, the first, died July 18, 1818, in the 50th year of his age.

Dr. James Dougal, the second, was born in Cookstown, Ireland, on the 7th of October, 1794, and his sister Margaret on the 14th of June, 1796. James' early education was obtained at such schools as the town of Milton then afforded. In August, 1809, he became a pupil of the Rev. Dr. Hood, a Presbyterian minister who taught a select Latin school at his home in Buffalo Valley. While attending this school he boarded at the home of George Clingan, and frequently recited his lessons to Mrs. Clingan. In after years he used to remark laughingly that he learned his Latin as much from Mrs. Clingan as from Rev. Hood. After leaving school he studied medicine with his father and graduated from the University of Pennsylvania in 1816 or 1817.

Surgery was his favorite study and he displayed so much skill in the pursuit of it that he was offered the position of Assistant Demonstrator of Anatomy in the University from which he had just graduated. At his father's request he declined this flattering offer, settled in Milton, and began the practice of medicine with his father.

On the 2d of July, 1819, he was married to Miss Sarah Pollock, sister of Ex-Governor Pollock, by Rev. John Bryson.

Dr. Dougal became a successful and distinguished physician and surgeon and his fame spread far and wide. His practice was very extensive, and he had the full confidence and respect of the people. Many young men studied under him and they all loved to refer to the fact that they had received instruction from one so eminent in his profession. Dr. Thomas Lyon, now the oldest medical practitioner in Williamsport, pays this handsome tribute to his distinguished preceptor:

"In 1835 I commenced reading medicine with Dr. James S. Dougal at Milton, at which time he was in partnership with Dr. William McCleery, they both having married sisters of Ex-Governor Pollock.

"Dr. Dougal had always ranked high as a physician, and had not his superior in northern Pennsylvania. He was called upon far and near as a consulting physician and performed all the principal surgical operations in his and the adjoining counties.

"As a man he possessed all the qualities of a gentleman, being always courteous, pleasant and agreeable. As a friend he was always kind, reliable and ever ready to bestow favors. He was very benevolent to the poor and never turned a person away on account of his poverty, either professionally or otherwise.

"I have a distinct recollection of his attending a patient to whom he not only gave his professional services gratuitously, but supplied the family with food, and on one occasion carried it himself to the house.

"When asked to confer a favor of any kind I never knew him to refuse. Hence he was sometimes imposed on by those whom he believed to be his friends. Being honorable and truthful himself he expected the same from those he benefited. He was a man of excellent judgment, strong will and great determination of character. For his numerous kind acts in my behalf I shall always hold him in the highest estimation."

This great and good man died at his home in Milton, May 23, 1878, in the 84th year of his age, and his death was sincerely and deeply mourned by hundreds of friends who have ever held his memory sacred in their hearts. His wife, Sarah Pollock, born July 16, 1799, died April 1, 1874. They had three sons and five daughters.

His brother, John S. Dougal, also a physician and unmarried, died at the same place on the 20th of October, 1831, and Dr. James S. Dougal, son of Dr. Dougal the second, died at the same house, and unmarried, on the 20th of February, 1847.

The Dougal family is remarkable for having so many distinguished doctors of medicine in its ranks from 1793 to the present time. Dr. Charles H. Dougal, a grandson of the original Dr. Dougal, lived and practiced medicine in the old Dougal mansion, now looked upon as one of the landmarks of Milton, until his death. His son, Sterret Dougal, M.D., is practicing in Baltimore, Md. EDWARD LYON, M.D.

24 W. Fourth St., Williamsport, Pa.

THE MEETING OF THE TRI-STATE DISTRICT MEDICAL ASSOCIATION AT DES MOINES, IOWA

OCTOBER 29 TO NOVEMBER 1, 1923

REPORTED BY JUDSON DALAND, M.D., PHILADELPHIA, PA.

This meeting was one of the most successful and enthusiastic of any that has been held in the past, and on the second day more than 1,300 physicians registered, not only from the tri-states, i. e., Illinois, Iowa and Wisconsin, but also from nineteen other states.

The program was remarkable because of the extraordinary number and variety of subjects discussed, and because of the number of well-known physicians and surgeons of the United States and Canada who gave clinics and read papers. President Horace M. Brown, Dr. William B. Peck and the Program Committee deserve hearty congratulations upon their success in securing so many well-known authorities to speak upon so many rich and varied topics. The program averaged about twenty clinics and addresses daily for four days, beginning at 7 a. m. and ceasing at about 10:30 p. m., and was so full that it seemed an impossibility to complete the work in the allotted time, but owing to the remarkable executive ability of the chairman, Dr. George V. I. Brown, this apparently impossible feat was accomplished.

All clinics and addresses were held in the same building, which had a seating capacity of fifteen hundred, and in which the acoustics were excellent. Bed patients were brought to the building by ambulance, and received care and attention from a staff of internes and nurses. The average attendance was between 1,300 and 1,500, and the audience was remarkable for faithful attendance and close attention, and was composed of representative physicians from the Midwest, whose average age was more than forty years.

The meeting began *without* opening ceremonies, at 7 a. m., and a ten-minute recess was declared each morning and afternoon, to examine scientific exhibits. One hour was allowed for lunch and supper, and in order to save time, luncheon and supper for 500 physicians could be obtained in the same building.

The stress and strain of more or less continuous work, from 7:30 a. m. to 10 p. m. was lessened by the thoughtfulness of the Chairman, who from time to time declared a recess of one or two minutes, to rise, stretch or sing. Discussions were omitted.

The officers of the Association, and the Board of Trustees are raising a fund of $100,000 the interest of which is to defray the expenses of laboratory workers who shall be invited to address the Association.

The only social event was a banquet, at 7:30 p. m., Thursday, November 1st, when addresses were given by the following distinguished guests: Sir Robert Falconer, President of University of Toronto, Can.; Sir Wm. DeCourcy Wheeler, President of Royal College of Surgeons of Ireland, Dublin, Ireland; Dr. Ray Lyman Wilbur, President of Leland-Stanford University, and President of American Medical Association, Leland-Stanford University, Palo Alto, California; Dr. Charles F. Martin, Dean and Professor of Medicine, McGill University, Faculty of Medicine, President of the Canadian Medical Association, Montreal, Canada; Hon. Albert B. Cummins, United States Senator, Des Moines, Iowa; Hon Nathan E. Kendall, Governor of Iowa, Des Moines, Iowa.

This meeting was the most successful in the history of the Tri-State District Medical Association, and I recall no meeting where the program was so rich and varied, nor an audience so faithful in attendance, and so determined to take advantage of all that the Program Committee had provided.

The unique features of the meeting were: (1) The absence of opening ceremonies. (2) Absence of all social features excepting the banquet. (3) All clinics and addresses, for all members, given in *one* auditorium. (4) Rich and varied program, averaging twenty clinics and addresses daily, between 7 a. m. and 10:30 p. m. (5) More than 1,300 representative members of the medical profession, in constant attendance and giving undivided attention. (6) The judicious use of two to ten-minute intervals to relieve mental strain. (7) The campaign to raise $100,000, the interest of which is to be given to laboratory workers who may be invited to present their work to the Association.

PROPAGANDA FOR REFORM

Administration of Insulin.—The present methods of administering insulin parenterally are far from satisfactory. Consequently, the earliest investigators of insulin and other pancreatic preparations attempted to secure physiologic effects by oral administration. There is evidence that slight effects may be obtained when insulin or other pancreatic preparations are introduced into the organism by way of the mouth under certain conditions. On the whole, however, the oral administration of insulin has proven quite inefficient. Rectal administration and nasal insufflation have been tried without success A recent study showed that pancreatic extracts taken in capsule form by the stomach were not effective in decreasing blood sugar or urinary sugar. It is desirable to give wide publicity to the current limitations of a most promising therapy, since unserupulous venders are already attempting to distribute just-as-good pancreatic or antidiabetic preparations that are recommended for oral use. (*Jour. A. M. A.*, Sept. 1, 1923, p. 752.)

El Zair.—This is quackery's latest offer of an elixer of life. The nostrum is brought to the attention of the public by El Zair, Inc., New York. The firm claims that the elixer of youth has at last been found. Much is made of the endorsement which the late W. T. Stead is stated to have given the nostrum. El Zair is to be dissolved in water and applied by sponging the body with it daily. The A. M. A. Chemical Laboratory analyzed El Zair and reported that essentially it may be considered to consist of one part of glacial acetic acid and three parts of magnesium sulphate (Epsom salt) perfumed with oil of bergamot. The contents of a bottle of El Zair are to be dissolved in a pint of water and, therefore, an essentially similar solution can be made by dissolving 2½ ounces of Epsom salt in a pint of distilled vinegar. (*Jour. A. M. A.*, Sept. 1, 1923, p. 768.)

Lactic Acid-Producing Organisms and Preparations.—The Council on Pharmacy and Chemistry reports on the present status of sour milk therapy. During recent years reports have been published which indicate that the growth in the intestine of the normally present Bacillus acidophilus may be increased so as to make this the predominating organism, by the administration of lactose, by milk fermented with Bacillus acidophilus, or by the administration of viable cultures of Bacillus acidophilus in conjunction with lactose. Growing out of the claims of favorable therapeutic action, the use of so-called Bacillus acidophilus milk and other products prepared with B. acidophilus has become quite widespread. While no one subscribes to-day to the original theories of Metchnikoff. there are many who believe that the regulation of the bacterial flora is of importance. There is evidence that the administration of sour milk is at times beneficial, particularly in pediatrics. A wide clinical observation indicates that for certan types of gastric and intestinal disturbances, fermented milk accomplishes more than unfermented milk. (*Jour. A. M. A.*, Sept. 8, 1923, p. 831.)

Accidents with Local Anesthetics.—The chairman of the committee for the study of toxic effects of local anesthetics, appointed by the Therapeutic Research Committee of the Council on Pharmacy and Chemistry, publishes a preliminary report. The committee has received reports of forty-two deaths following the use of local anesthetics occurring within the last few years. These accidents have not been reported on by former committees of the association. The deaths reported are:

Anesthetic	*Number*
Stovain	1
Alypin	1
Procain	3

Apothesin	4
Butyn	4
Butyn and cocain	1
Procain and cocain	10
Cocain	18
Total	42

Under the headings Procain, and Procain and Cocain, novocain is included: one is reported as procain and the other twelve as novocain. As the five deaths following the use of butyn are the first reported, the committee is very desirous of receiving full details of other fatalities for comparison of relative toxicity. These reports should be sent to the chairman of the committee, Emil Mayer, M.D., 40 East Forty-first Street, New York City. (*Jour. A. M. A.*, Sept. 15, 1923, p. 947.)

Some More Miscellaneous Nostrums.—The following products have been the subject of prosecution by the Federal authorities charged with the enforcement of the Food and Drugs Act: Cowan's Rheumatism Herb (Rheumatism Herb Co.), consisting of dried and moldy leaves of a species of eucalyptus. Jad Salts (Wyeth Chemical Co, Detroit—not John Wyeth Bros., Philadelphia), consisting essentially of citric and tartaric acids, salt, baking soda, sodium phosphate and very small amounts of hexamethylenamin, lithium carbonate and potassium bicarbonate. Crane's Quinin and Tar Compound (Crane Medicine Co.), consisting essentially of quinin, sodium salicylate, ammonium chlorid, Epsom salt, oil of anise, tar, menthol, table salt, calcium phosphate, sugar, alcohol and water. Crane's Liver Pills (Crane Medicine Co.), consisting essentially of aloes and magnesium carbonate. Crane's Kidney Pills (Crane Medicine Co.), containing methylene blue, hexamethylenamin, plant extractive and iron sulphate. Tekol (Colonial Tablet Co.), containing ground celery seed and cocoa with about a half grain of caffein in each tablet. Veronica Water (Veronica Medicinal Springs Water Co.), containing magnesium sulphate (Epsom salt), sodium nitrate, sodium chlorid (common salt), calcium bicarbonate, calcium sulphate and magnesium chlorid. (*Jour. A. M. A.*, Sept. 15, 1923, p. 946.)

So-called "Improved" Ethers.—In 1919, Cotton declared that ethyl ether especially purified was not a good anesthetic, and that real anesthesia could not be obtained unless ether contained some potent synergist. He proposed the use of Cotton Process Ether which was stated to be ether containing ethylene, carbon dioxid and ethyl alcohol. The manufacturer submitted Cotton Process Ether to the Council on Pharmacy and Chemistry, but so far, confirmation of Cotton's claims is lacking. Wallis and Hewer of England have also recommended a new general anesthetic with the claim that pure ether possesses practically no anesthetic properties, and that their product contains a mixture, in unspecified amounts, of ketones (identified only in vague terms) which have been treated previously with carbon dioxid and ethylene. This product has been placed on the market as "Ethanesal." It has received some endorsement, especially from Dr. H. E. G. Boyle of London, who made it the subject of addresses on anesthesia in this country. In contradiction of the claims made for Cotton Process Ether and "Ethanesal," Bourne and Stehle showed that ether prepared in a way to exclude impurities possesses the usual anesthetic properties. A painstaking investigation recently reported by Dale, Hadfield and King confirms the generally accepted belief that the anesthetic action of ether is due to the ether itself. They also report their examination of "Ethanesal." They found "Ethanesal" to contain 95.5 per cent ether, 4 per cent normal butyl alcohol, and 0.5 per cent of a mixture of ethyl alcohol and an aldehyd and possibly traces of other substances. The investigation shows that there is no evidence to warrant attributing the anesthetic action of "Ethanesal" to any other constituent than the ether. On the contrary, the work shows that the anesthetic action of ether is improved by purification. (*Jour. A. M. A.*, Sept. 22, 1923, p. 1040.)

Ethanesal.—In 1921, Dr. H. E. G. Boyle of London read a paper before the Section on Miscellaneous Topics at the annual meeting of the American Medical Association. The paper dealt, in part, with so-called improved ether—"Ethanesal." The paper was not published in *The Journal A. M. A.* on the ground that *The Journal* does not publish articles on new remedies until those products have been reported on favorably by the Council on Pharmacy and Chemistry. The investigation of "Ethanesal" by Dale, Hadfield and King which makes plain the fallacy of the claims for the product, demonstrates again the advantage to the medical profession of a competent judicial body—the Council on Pharmacy and Chemistry—to investigate new additions to our materia medica. (*Jour. A. M. A.*, Sept. 22, 1923, p. 1025.)

The Nature of Insulin.—The manufacture of insulin from the pancreas is a costly and laborious undertaking. Therefore, the artificial synthesis is important. Before the prospect of a synthesis can be entertained, however, the chemical structure must be ascertained. Evidence is developing that insulin is protein in nature. Consequently the hope of its isolation as a chemically pure substance becomes slender. (*Jour. A. M. A.*, Sept. 29, 1923, p. 1117.)

Overheard:

Aren't these doctors going tew far? Here is this Doctor Banter come from Canaday to tell about his insultin' treatment for what the doctors call the "tried-to-beat-us?"

Dr. Owen Lee Day, of Roxmore, was relating that he had been urgently summoned one evening, before daylight saving had been played out, to the palatial home of a wealthy retired distiller. Scarcely had he been received in the hall, when a hundred dollar bill was placed in his hand with the remark, "Doctor, this is for the case"—

Rude Interrupter: Do you have much trouble getting blank forms from the Prohibition Agents?

Dr. Sotto Voce had just completed his elaborate, inaudible paper at the State Society meeting amid the hearty applause of the alleged auditors, when, after conferring with an entering bell-boy, the chairman bawled out, "Is Dr. Louder present?" The tactful wag who devised this ironical query should have been voted an appreciative vote of thanks.

Dr. O. Pine queries: Is not many a one great simply because of the desire of interested flatterers to flourish in the same limelight, accidently focused upon the wrong object?

Dr. O. Pine queries: Which is the wiser—the medico of thirty years' standing who confesses he only knows a little medicine, or the medico of twenty years' duration who confesses he feels he knows none at all? Or which is the worse exaggerator *"a rebours"?*

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg.
Pittsburgh, Pa.

MEDICAL DEFENSE

As in 1923, each member of a component county medical society will, upon payment of his 1924 dues, receive a triplicate of a receipt for same, which has printed on the reverse side quotations from the By-Laws governing eligibility to and participation in the benefits of our medical defense fund. This information also includes the name and address of the councilor for the district in which each member resides. To be assured of every assistance by our defense plan against suits for alleged malpractice, members should not only pay their dues promptly, but should file each year's receipt for prompt and ready reference in case of threatened suit. Not infrequently the Board of Trustees find it necessary to refuse any but moral assistance to members not paying their dues before March 28th, or members who have failed to observe the letter of the requirements for participation in the benefits of the medical defense fund.

ANNUAL DUES

During the past four years, improved results in the prompt collection of annual dues have been the rule in the majority of our component county medical societies. There have been, and probably always will be, exceptions, but in most county societies the secretary and other officers have taken considerable pride in collection of dues when due, January 1st. The failure of members to pay promptly not only increases the work of county, state and national society officers, but it increases the expense of administration.

We will publish as usual during February and March the comparative records of the various component county medical societies in the collection and remittance of the current year's assessment.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to November 16th:

Adams: *Death*—Alfred C. Rice, McSherrystown (College of Physicians and Surgeons, '97), November 9, aged 47.

Allegheny: *New Members*—Norman C. Miller, Mercy Hospital; Ford Curtis Mohney, 3267 W. Liberty Ave.; Leo Day O'Donnell, Mercy Hospital, Pittsburgh. *Removal*—James P. McMullen from Pittsburgh to Wellsburg, W. Va. *Transfer*—John O. Woods, New Castle, to the Lawrence County Medical Society. *Death*—Ray D. Cassady, 378 Butler St., Etna (University of Pittsburgh, '20), of pneumonia, October 22, aged 31.

Beaver: *New Member*—Howard C. McMillan, Aliquippa.

Bradford: *New Member*—Jay D. Smith, Canton.

Butler: *New Members*—Byron L. Ramsey, 245 S. Main St.; Max S. Nast, 131 S. Main St., Butler. *Death*—James L. Christie, Conoquenessing (Med. Coll. University of Cincinnati, '77), October 13, aged 72.

Cambria: *Reinstated Member*—Arthur H. McAnulty, Nanty Glo. *Removal*—Elmer E. Geissler from Johnstown to Lilly; Perry O. Hall from Lilly to Ridgway (Elk Co.); William G. Turnbull from Cresson to State Department of Health, Harrisburg (Dauphin Co).

Clarion: *Removal*—Joseph Aaronoff from Philadelphia to Du Pont Bldg., Wilmington, Del.

Crawford: *Removal*—Walter H. Cowan from Harmonsburg to Box 206, Conncaut Lake.

Delaware: *New Member*—Donald J. McCormick, 301 W. Seventh St., Chester. *Removal*—William D. Lithgow from Chester to Orlando, Fla. (Box 1461).

Elk: *Removal*—N. M. Daghir from Dagus Mines to Byrnedale.

Fayette: *Removal*—R. C. Hough from High House to 52 Cleveland Ave., Uniontown.

Indiana: *New Member*—Thomas L. Sisncy, Iselin. *Removal*—Leroy E. Coolidge from Clymer to 113 Carroll Ave., Takoma Park, D. C.

Lancaster: *Death*—Henry K. Blough, Elizabethtown, October 19, retired.

Lawrence: *New Members*—Mary Josephine Baker, Mildred Rogers, New Castle.

Lehigh: *Removal*—George H. Bloom from Allentown to 101 S Main St., Phillipsburg, N. J.

Northampton: *Removal*—Thomas H. Powick from Easton to Pottstown (Montgomery Co.).

Philadelphia: *Death*—Conrad Berens, Philadelphia (University of Pennsylvania, '83), October 6, aged 64.

Venango: *Removal*—Irwin H. Boyd from Oil City to Clayton, Del.

Warren: *Removal*—Paul G. Weston and Adelaide Ellsworth from Warren to 413 N. Main St., Jamestown, N. Y.

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since October 15th. Figures in first column indicate county society numbers; second column, State Society numbers.

Oct. 18	Cambria	140	7299	$5.00
19	Beaver	69	7300	2.50
	Indiana	64	7301	5.00
	Cambria (1922)	133	7330	5.00
Oct. 31	Bradford	48	7302	2.50
Nov. 5	Allegheny	1238–1240	7303–7305	7.50
1924				
Nov. 6	Lawrence	1–2	1–2	10.00
15	Butler	1–2	3–4	10.00

FREDERICK L. VAN SICKLE, M.D.

Executive Secretary

230 State St., Harrisburg, Pa.

SMALL FACTS BUT TRUE

Any member of the Medical Society of the State of Pennsylvania, who desires a membership list for 1923-24, can obtain the same without any greater cost than a one-cent postal card, which, sent to the State Society office, 230 State St., Harrisburg, Pa., will procure one *pronto*. Do not say that we have not told you *how!*

If you are interested in the Workmen's Compensation Law of the State of Pennsylvania, that is, if you are doing industrial surgery, you now have the chance to air your complaints, if you have any, to a Commission on Compensation Laws consisting of Dr. Lever F. Stewart, chairman, Clearfield; Dr. Moses Behrend, Philadelphia; Dr. John T. MacDonald, Norristown; Dr. Herbert Gibby, Wilkes-Barre, and Dr. Morris A. Slocum, Pittsburgh, Pa. Write your views of this law to this commission or to its chairman. It is necessary to obtain the opinions of enough physicians doing surgery who are affected by the law, to establish the defects in the law and to effect the changes required.

Don't say we did not warn you in time. It will not be long before prospective candidates for the Senate and House of Representatives will be coming to the front, and the views of these candidates must be obtained as early as possible. The proposed amendments to the law affecting physicians and hospitals must be in shape to present, with the request for support and coöperation, if we hope to have success in 1925.

What do you know about the campaign for preliminary and premedical requirements under state regulations? It is quite certain that at least a good working majority of the medical doctors of Pennsylvania must become familiar with this movement, so that when the proposed bill is drawn, active support may be given it in order to secure its passage. Passive interest or indifference will tend towards increasing the strength of all those who *do not* desire preliminary and premedical laws to regulate those who practice any form of the healing art. The methods or means of applying treatment are of little moment compared with the knowledge requisite to understand the fundamentals leading up to such treatment. Will you lend your aid?

How much aid will you give the Committee on Public Relations this year? You know the objects of this committee. For years we have been trying to reach the public in order to present our side of the case. We are now preaching preventive medicine. It takes a lot of energy as well as the active support of every agency in the medical profession to obtain results. The campaign for diphtheria prevention started last year is well on its way. Will you help in the work for the coming year?

How much effort are you and your county society going to put forth during the next nine months in the work of postgraduate medical education? You are acquainted with what is being done in different parts of the state in several county societies. The public is in a position to be discriminating, and ability counts for much more than it did many years ago. We must keep up with the times. We are hoping that greater effort will be exerted during the coming months to establish classes for postgraduate instruction.

What about that M.D., who has recently located in your vicinity? Don't you think he would like to join your county medical society, and is only waiting to be asked? But do not forget there are quite a few other practitioners of medicine who do not now belong to the medical society in their county or any other county. Some are former members and some never have tried to join. It is about time that every eligible medical man or woman in Pennsylvania has membership in some county society.

HEALTH ADVERTISING PAYS IN HUMAN LIFE, IN DOLLARS*

METHODS USED TO REDUCE MORTALITY RATES BY THE METROPOLITAN CAN ADVANTAGEOUSLY BE ADOPTED BY OTHER ADVERTISERS. DOES ALTRUISM PAY?

BY ROBERT LYNN COX

Second Vice-President, Metropolitan Life Insurance Company

What is advertising but the dissemination of knowledge—whether the knowledge disseminated be that you get good safety pins cheap at Mr. Blank's store, or that longevity will be promoted and happiness increased through the prevention of disease?

In this assembly I might perhaps classify as advertising all of the Metropolitan Life Insurance Company's educational efforts to promote health.

This includes booklets and other printed literature circulated by the millions—posters, moving pictures, radio broadcasting, health exhibits, magazine articles, last and perhaps least, paid-for space in periodicals.

ITS ADVERTISING THEORY

The Metropolitan display advertisements on health, appearing in the magazines, have a theory behind them, surprising as that may seem to some of you, and that theory may be of interest to you as advertising men.

We believe that a business institution that has been favored with public patronage to a point where its customers (in our case policy-holders) number one-sixth of the entire population of the United States and Canada—men, women and children—should be willing to print welcome and useful information gleaned from a wealth of company experience, without exacting in exchange therefor any sort of trade or business dealings from readers of its advertisements.

An actual examination of 193 advertisements in a recent issue of a leading journal disclosed only one that did not make the benefits they so glowingly portrayed contingent on the transaction of business with the advertisers.

It may be foolish for an insurance company to declare and distribute advertisement dividends to readers right on the spot, regardless of whether or not they ever become customers, but the Metropolitan Life Insurance Company's efforts along this line seem to have the merit of novelty at least.

NEW ADVERTISING LEADERS

A highly developed advertising technique has brought the advertising pages of our leading magazines up to a point where they sometimes compete almost disastrously in art and thought and diction with the text pages of such magazines.

May we not suggest that at least many of the so-called "big advertisers" might well discard entirely the "trade with us and save money" attitude, and hereafter compete directly and keenly with newspaper and magazine editorial pages?

Surely such a policy carried out by all advertisers with skill like that now employed in exploiting the virtues of their several products would produce myriads of 100 per cent readers of the advertising columns, and perhaps, by increasing the demand for trained editorial writers, it might put their salaries up to a point where they would compare favorably with wages now being paid to bricklayers, plasterers, and plumbers.

Why not, even at the risk of such an unprecedented overturning of well-established economic custom?

Another question. Why should we business men leave it to newspaper and magazine writers to dig out the interesting things that we have learned in and about our business, and to philosophize upon them at so much a line, while we ourselves neglect the opportunity to tell in our own way what the public would like to know about us?

WAYS IT ADVERTISED THE GOSPEL OF HEALTH

Yes, I heard your question:

"Will it pay? Will what you seem to be calling a public-spirited editorial style of advertising pay?"

I cannot segregate the various kinds of advertising done by my company, and furnish a ledger balance for each of them, but I believe I can furnish an answer on all combined.

Perhaps our educational publicity activities of last year, which I have called "dividend distributions" to the public generally, but which our competitors are sometimes pleased to call advertising, will illustrate what we think all large corporations should do more of.

In 1922 we distributed 33,322,161 pieces of health literature, ranging from the booklet, "A War on Consumption," to the pamphlet entitled, "The Child," which discusses common ailments of children and the means of relieving and preventing them.

The company conducted or instigated and helped to conduct 440 clean-up campaigns in cities; it displayed 265 health exhibits; participated in 107 community health campaigns, and thirty baby weeks.

PAID IN LIVES AND DOLLARS

It showed smallpox films 454 times in thirty-two states, to defeat proposed anti-hygienic legislation. It financed two municipal experiments to demonstrate what government could do if it would, by one of which mortality from tuberculosis was reduced 60 per cent and by the other infant mortality was decreased 50 per cent.

And such work of various kinds, and in varying degree, we have been doing for many years. Besides this, display space was used in magazines of the United States and Canada, carrying health messages to approximately 50,000,000 readers.

Is such work effective? Did it pay? Is it the business of a life insurance company to concern itself about the physical welfare of the people as a whole? Let us see.

Through its nursing service, periodic examination of policy holders, clean-up campaigns, coöperation with and help from the many established health agencies, distribution of health messages in many ways and as widely as possible, 52,000 fewer of our industrial policy holders died last year than would have died under the death rate of 1911, the first year for which mortality statistics comparable with later years were compiled by the company.

Measured in terms of lengthened life, this meant an average of eight and one-half years added to the life of our industrial policy holders. Measured in dollars and cents, it meant the payment in 1922 of $11,828,000 less in death claims than would have been paid if the death rate of 1911 had prevailed in 1922.

Surely the experience of our company shows that health promotion work has paid the 20,000,000 policy holders who are the owners of our company, and who get all the savings we can make in the cost of their insurance through lengthening the average human life.

Then there is, of course, the sentimental or humanitarian aspect; that which takes into consideration the misery and suffering that has been obviated, the sorrow from bereavement that has been avoided. In this world where the search for happiness is man's chief occupation, that achievement alone might justify all that it cost.

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*Reprinted from Judicious Advertising, for Nov., 1923.

URGED FOR OTHERS

Be that as it may, we reach the conclusion that dissemination of information concerning disease prevention in the ways we have followed, pays—pays in dollars—pays in other ways, and if engaged in generally by business interests would pay the country as a whole.

Health messages, we believe, are proper subjects for display advertising, particularly for life insurance companies whose business is directly involved with mortality rates. I do not say, nor mean to infer, that our company is committed to a continuance of all or any of the kinds of health promotion advertising we have been doing.

It may be that we shall reach the conclusion that to continue it singlehanded, or with but little outside support, imposes a burden which our policy holders, though numerous, should not be asked to bear. But we have no doubt of the wisdom of health message advertising, if all companies could be induced to join in the enterprise.

* * *

I am optimistic enough to hope that other companies, and especially other life insurance companies, may be induced to make of their advertising what might be called "dividend distributions"—advertising that will pay every reader then and there for having read it; that will not require of him an investment of money with the advertiser in order to get the benefits portrayed.

Let it be in a form that is entirely freed from evidence of selfish intent on the part of the advertiser; freed from that familiar note—buy, buy now, buy from us.

MAKING FACTS KNOWN

Health promotion efforts can succeed only as essential facts can be made matters of common knowledge among all the intelligent reading, thinking, working people. Health promotion advertising must induce action over there, everywhere, not here and here alone. It must stimulate coöperative efforts by all, not merely among those who can be induced to form a common business alliance.

I do not presume to say what methods are best and should prevail in commercial lines, but I do say that health promotion advertising to be worth its cost must be like seeds scattered by the four winds of Heaven to germinate and take root where they fall. The harvest must be for all, not merely for the sower.

If all those who are in possession of the vital truths of health promotion would join, through advertising, in sowing them broadcast in the wide and fertile fields of public interest, what a harvest there would be—what a harvest of longevity and happiness for mankind at large!

* * *

To-day we prevent typhoid, we prevent smallpox, we prevent diphtheria, we prevent tuberculosis, we prevent yellow fever, and a host of other diseases as well as cure a large percentage of the cases of them that do develop despite all reasonable precaution.

But I would point out how unreasonable and illogical it is that mankind should suffer and have to be treated for the cure of diseases that have been proved to be preventable.

This condition not only reflects upon our efficiency as a people, but is unfair to the individual who must face disease, and possible death, solely because of community carelessness or neglect.

A few decades ago the people in their ignorance about diseases considered them to be scourges of a wrathful God, and accepted them as punishment that was deserved.

But to-day we know that many of them are unavoidable only when and where ignorance or prejudice closes our eyes and ears to the knowledge that has been gained about them.

In recent years it has come to be, and rightfully, a public disgrace for a community to have an epidemic of typhoid. With the proper precaution typhoid is preventable, and its presence in any considerable number of cases is plain evidence of the grossest neglect by those on whom community welfare rests.

HEALTH RESPONSIBILITY

In the present social organization, because of our relation to and dependence upon one another, responsibility for health is becoming more and more one that is shared by institutions, municipalities, the state, and the nation.

This, however, does not excuse the individual. As a part of the social structure he is under obligation to every other part of it. No man can have tuberculosis and say it is none of your business, or mine. It is.

Becoming then a public question, health promotion by disease prevention demands attention from every thinking individual, every institution, every unit of government.

NEED FOR FUNDS—

Governmental units, such as city, county, state, and nation have not been unaware of the desirability of making education in disease prevention universal, nor have private, semi-public, and public institutions entirely overlooked the importance of it.

But all have been handicapped through lack of funds to do it with—funds withheld by taxpayers or stockholders, or copartners, because they had not learned, and could not be made to see that death postponement pays dividends in dollars as well as in sentiment.

Now it happens that the business with which I am connected is accustomed to measure life in terms of its economic value.

We see in a full grown man, possessed of average physical and mental equipment, a being that is worth to the world more than his board and keep. By the same token we see in his untimely death an economic loss to the world.

It is our business to insure the individual against this loss. This is accomplished by the simple process of pro-rating the loss scientifically among other insurers who are fortunate enough to keep on living.

—AND PUBLIC SUPPORT

But as to the aggregate loss occasioned by high mortality rates, we can do little except to join with others in efforts that will make for a general improvement in mortality throughout the country. It is right here that we come directly to my plea for health promotion through advertising.

* * *

I have said that the great field of health promotion is the wholesale business of disease prevention; that it is a subject of universal interest, and, therefore, all we need to do to get every one behind the movement is to convince the public at large that many of the worst diseases are preventable, and to show how to prevent them.

COUNTY MEDICAL SOCIETIES

Adams—James P. Dalbey, M.D., Gettysburg.
Allegheny—Lester Hollander, M.D., Pittsburgh.
Armstrong—Jay B. F. Wyant, M.D., Kittanning.
Beaver—Francis H. McCaskey, M.D., Rochester.
Bedford—N. A. Timmons, M.D., Bedford.
Berks—Clara Shetter-Keiser, M.D., Reading.
Blair—James S. Taylor, M.D., Altoona.
Bradford—Stanley D. Conklin, M.D., Sayre.
Bucks—Anthony F. Myers, M.D., Blooming Glen.
Butler—L. Leo Doane, M.D., Butler.
Cambria—Joseph J. Meyer, M.D., Johnstown.
Carbon—Jacob A. Trexler, M.D., Lehighton.
Center—James L. Seibert, M.D., Bellefonte.
Chester—Henry Pleasants, Jr., M.D., West Chester.
Clarion—H. A. Wick, M.D., New Bethlehem.
Clearfield—W. E. Reiley, M.D., Clearfield.
Clinton—Clair B. Kirk, M.D., Mill Hall.
Columbia—C. B. Yost, M.D., Bloomsburg.
Crawford—Cornelius C. Laffer, M.D., Meadville.
Cumberland—Calvin R. Rickenbaugh, M.D., Carlisle.
Dauphin—W. Minster Kunkel, M.D., Harrisburg.
Delaware—George B. Sickel, M.D., Chester.
Elk—Joseph E. Madara, M.D., St. Marys.
Erie—Anna M. Schrade, M.D., Erie.
Fayette—Hugh Ralston, M.D., Uniontown.
Franklin—Samuel D. Shull, M.D., Chambersburg.
Greene—Thomas B. Hill, M.D., Waynesburg.
Huntingdon—John M. Keichline, Jr., M.D., Huntingdon.
Indiana—H. Boydston Smith, M.D., Blairsville.
Jefferson—W. A. Hill, M.D., Reynoldsville.
Juniata—W. H. Banks, M.D., Mifflintown.
Lackawanna—G. A. Clark, M.D., Scranton.
Lancaster—J. Sullivan, M.D., Lancaster.
Lawrence—William A. Womer, M.D., New Castle.
Lebanon—W. Horace Means, M.D., Lebanon.
Lehigh—Willard C. Masonheimer, M.D., Allentown.
Luzerne—H Irvin Evans, M.D., Ashley.
Lycoming—Wesley F. Kunkle, M.D., Williamsport.
McKean—Francis DeCaria, M.D., Bradford.
Mercer—M. Edith MacBride, M.D., Sharon.
Mifflin—F. A. Rupp, M.D., Lewistown.
Monroe—Charles S. Flagler, M.D., Stroudsburg.
Montgomery—John C. Simpson, M.D., Norristown.
Montour—John H. Sandel, M.D., Danville.
Northampton—Wm. A. Finady, M.D., Bethlehem.
Northumberland—Charles H. Swenk, M.D., Sunbury.
Perry—A. R. Johnson, M.D., New Bloomfield.
Philadelphia—Franklin M. Crispin, Philadelphia.
Potter—Ross H. Jones, M.D., Coudersport.
Schuylkill—Arthur B. Fleming, M.D., Tamaqua.
Snyder—John O. Wagner, M.D., Beaver Springs.
Somerset—H. Clay McKinley, M.D., Meyersdale.
Sullivan—P. G. Biddle, M.D., Dushore.
Susquehanna—Robert B. Mackey, M.D., Montrose.
Tioga—H. A. Vosburg, M.D., Arnot.
Union—Oliver W. H. Glover, M.D., Laurelton.
Venango—John F. Davis, M.D., Oil City.
Warren—M. V. Ball, M.D., Warren.
Washington—Charles C. Cracraft, M.D., Claysville.
Wayne—Hugh Stevenson, III, M.D., Honesdale.
Westmoreland—D. Allison Walker, M.D., South West.
Wyoming—Herbert L. McKown, M.D., Tunkbannock.
York—Maurice C. Wentz, M.D., York.

December, 1923

COUNTY SOCIETY REPORTS

BERKS—NOVEMBER

At the meeting of the Berks County Medical Society on November 13th the Society was favored with a paper read by Dr. Oscar E. Fox on gall-bladder disease, which was freely discussed.

Before taking up the symptoms, diagnosis and treatment of the disease, Dr. Fox mentioned some of the more recent opinions in reference to its anatomy and physiology. He laid particular stress on the importance of early diagnosis and the necessity for early surgical treatment as essential to obtain the best operative end result. A painstaking history and an intelligent physical examination followed by subsequent observation of certain cases are the most useful means at our command for accurate diagnosis. The x-ray study and the transduodenal drain, aid in diagnosing gall-bladder disease, but should not be depended upon except in so far as they may help to prove the conclusions arrived at from the patient's history and clinical findings. *Chronic indigestion,* discomfort or actual pain coming on within thirty minutes after eating, *bilious attacks,* consisting of attacks of headache, dizziness, languor, loss of appetite, nausea and vomiting, *jaundice,* even though it existed many years ago, may be suggestive, especially when by a process of elimination other causes appear to be improbable. He emphasized the importance of studying a case of gall-bladder disease in relation to other organs and briefly discussed some of the complications associated with gall-bladder disease. He feels that medical treatment has its place but should not be persisted in where the diagnosis of gall-bladder disease is established. Furthermore, he believes that the diseased gall-bladder should be removed and that the merit of the argument between cholecystectomy and cholecystostomy is easily disposed of and does not compare with the importance of early diagnosis of a case of cholecystitis and the difficulty in the recognition of some diseased gall-bladders at the time of operation. This is especially true in cases where the gall-bladder shows no gross pathology. He concluded by reviewing a small series of 14 cases, all of which exhibited calculi and presented complications, thereby emphasizing the fact that most of them should have been diagnosed and operated earlier in order to obtain the best results.

Clara S. Keiser, M.D., Reporter.

DAUPHIN—NOVEMBER

The Dauphin County Medical Society was fortunate in having for its speaker on the evening of November 6th Dr. Judson Daland, professor of medicine in the Postgraduate School of the University of Pennsylvania, who gave a lecture on his experiences in Japan during the earthquake, and graphically illustrated his talk with lantern slides, taken before and after the catastrophe.

At the time of the quake, Dr. Daland was fortunate in being in a small boat off the coast of Nicco, but even there he felt violent vibrations. Luckily the boat remained afloat, and caused no casualties in his party. The vibrations traveled north to south, and continued intermittently for three days. Nicco was isolated from the world—even the Emperor for six days was unable to communicate with the rest of the island, and then only by means of an aëroplane.

A great part of the destruction of life and property in Yokohama, Tokio, and other large cities followed in the wake of flames fanned by a sixty-mile gale. Boats in the harbor were dashed upon the shore. Many of the inhabitants who escaped the falling buildings, and sought shelter in the near-by waterways, were either drowned or cremated by the islands of fire, formed by the burning oil hurled from the exploding oil tanks. Others, endeavoring to escape the falling buildings, congregated in the squares, only to be surrounded by a wall of fire and to suffer the same fate.

The Grand Hotel fell in four seconds, and all but four of its guests were instantly killed. Great fissures in the earth opened up, and it is said that some were of a size sufficient to engulf a large automobile. The heat was so terrific, that the people aboard the Empress Australia, though they pulled out 1,400 feet from shore during the quake, were compelled to close all the portholes, and to keep a constant stream of water playing over the ship.

The injuries encountered were burns, contusions, fractures, sprains, and a nervous condition analogous to shell shock.

The Japanese by nature having no initiative suffered keenly the lack of food, shelter, and water—the usual aftermath of such calamities, especially since succor was delayed by the hesitant attitude of the Japanese officials toward all foreign offers—particularly the American. It was not until the American Red Cross sent over $11,000,000 that they began to realize that there was no ulterior motive behind our offers of assistance. As a result of this great work of relief, there is a better feeling between Japan and America than there has been for a decade.

The meeting was open to the public and a large audience showed its appreciation of Dr. Daland's most instructive and entertaining talk.

W. M. Kunkel, M.D., Reporter.

ERIE—NOVEMBER

The Erie County Medical Society met November 6th. Dr. John, of Cleveland, spoke to the society on the subject of diabetes. He has a great number of these cases under his care. He regards diabetes as a functional disturbance and not as a disease entity. The activity of the pancreas, or really the secretion of the islands of Langerhans, has everything to do with the utilization of carbohydrates. The lack of this secretion causes the inability of the organism to utilize carbohydrates and this inability constitutes diabetes. The amount of this secretion varies in different individuals, some have abundance and others a limited amount. There is no distinct line of demarcation between a diabetic and a nondiabetic. An individual who has no secretion of these islands cannot naturally use carbohydrates. Others have enough to take care of limited amounts. But the line of limitation or distinction between a normal and a pathological individual is obscure.

One might divide them thus, into three classes: those who have very strong islands; those who have limited secretion of their islands; and those who have no secretion, or so little as to be negligible. The first group has a perfectly good chance of escaping diabetes, no matter how much they abuse their metabolism by excessive indulgence in carbohydrates.

Those of the second group are likely candidates for diabetes. This is the most interesting class. It would never be safe for them to partake plentifully of carbohydrates. If they are not fond of sweets and starches they might escape without ever realizing their weakness. If they partook heavily and abused their metabolism they would inevitably become diabetic.

Those of the third group have no chance whatever of escaping. A child may be diabetic from the start. Many infants are receiving insulin. Their islands function feebly or not at all, so that their inherent power to utilize carbohydrates is nil.

Why are obese people more susceptible to diabetes than the more slender types? Because usually they eat more heartily of sugars and starches. If an individual needs 2,500 calories per day and takes 5,000 he stores the excess and invites diabetes by thus overloading his pancreatic function. Roughly speaking this overloading of the pancreatic function with its attendant overweight is the first stage of diabetes. Not every obese individual is diabetic. There are some who seem to have unlimited secretion of their islands and apparently escape ill effects from their overindulgence.

Infections are particularly unkind to diabetics and to those potentially so. They cause a rise in blood sugar.

The real scientific work on diabetes in this country dates back only 25 years. Joslin was the first to do serious work in this line. He saw to it that the diet of his diabetic patients was apportioned to their pancreatic ability. If gotten early, these patients were the lucky ones. But, there was nothing to do in those cases who had no secretion.

Allen was the next after Joslin and Americans should be very proud of Allen's work. His principles were based on the research work he did at Harvard. He removed variable amounts of the pancreas in dogs and, of course, variable amounts of the islands, in order to determine carefully how much he could remove before making a diabetic dog. He found if a certain amount was removed, he could no longer feed unlimited amounts of carbohydrates.

The gradations of diabetes as we meet them in practice are most interesting. If a patient weighing 200 pounds and another weighing 100 pounds can each take care of only 1,500 calories, the heavier patient is only taking care of half as much as the lighter patient. Allen's treatment is often spoken of as the starvation treatment. It is not a starvation treatment, it is undernourishment for 1, 2 or 3 days a week. Allen holds to the policy of keeping the average patient from 5 to 10 pounds below standard normal weight. Before the high fat diets came into use there was great fear of acidosis. Fat can only burn in a carbohydrate flame. It breaks down into carbon dioxide which is excreted through the lungs and water which is excreted through the kidneys. If fat does not burn properly you get acetone and diacetic acid. You can test for acetone in the blood and in the urine. If found in the urine it means only that the body sheds the abnormal product, but if found in the blood it is a serious matter and leads on to coma and often, death. When acetone is in the blood it means that the organism is not shedding this abnormal material, but that it is accumulating in the blood stream; this precipitates a catastrophe.

If a patient has only a small amount of secretion from his islands and we can inject insulin, we can double his diet in this way, or in other words double his power to take care of his diet. There are two ways to find out the dose of insulin he should receive and also how to increase his diet—by examining his urine and by examining his blood.

Normal individuals have .12 of 1% blood sugar. After a meal this goes up a variable degree for about one-half hour, that is, the rise is continuous for a half hour and then begins to fall. In most normal cases it is down in about an hour. In a diabetic individual it goes up promptly, but it comes down much more slowly; staying up more than three hours is significant of a lack of secretion of the islands; in other words, diminution of function of the islands. The degree of hyperglycemia needed to produce a glycosuria is very variable also; in some individuals it may be as high as

3.50 or even higher. The level at which the blood sugar goes over into the urine is called the renal threshold. If only a relatively low degree of hyperglycemia is present and the patient shows a glycosuria we speak of that patient having a low renal permeability. If there is a high degree of hyperglycemia before the patient shows a glycosuria, that is a high renal permeability. But it is to be remembered that a patient may have a glycosuria without an accompanying hyperglycemia.

In testing individuals to find in which class of tolerance they belong, give 100 grams of glucose and follow what effect this has on his blood sugar level. A quick rise and quick fall puts him in the class of greatest tolerance. A quick rise and hours to come down puts him in the diabetic class. Between the two are many gradations. There are 2,000,000 diabetics in this country. Those who have the earmarks of diabetes should be tested. The problem of insulin therapy is a hospital problem; it is too technical for home administration. Blood sugar tests are the criteria which are to judge the problem. Fasting blood sugar in a patient who is not getting insulin is very different from fasting blood sugar in a patient who is receiving insulin. In the latter, that is the time of his highest hyperglycemia.

Dr. John was asked as to the dangers of insulin administration. He replied that in his opinion the dangers had been much magnified. He had not found it necessary to give glucose intravenously; an orange had usually been enough to tide over this time, or better still, a teaspoonful of whisky with a teaspoonful of sugar in hot water was admirably effective. At first some of the reactions had been rather terrifying, partly because there was no precedent to go by. These reactions are accompanied by cold sweats, rapid pulse and tremulousness.

Any case which has shown sugar in the urine should always have the glucose tolerance test done. Tolerance has been increased under proper diet, and since the proper use of insulin must be accompanied by proper diet, it is a little difficult to judge whether insulin increases this tolerance. It has certainly greatly improved many cases which in the pre-insulin era would have been hopeless and has stayed the downward course in a still wider range of cases.

Anna M. Schrade, M.D., Reporter.

LUZERNE—OCTOBER-NOVEMBER

The regular meeting of the Medical Society was held in the Medical Building on October 17, 1923, at 8:35 p. m., and was called to order by President Schappert.

Dr. Drake reported for the Program Committee that on November 7th, Dr. R. N. Clark, and on November 21st, Dr. A. L. Luchi, would read papers, the subjects of which had not yet been announced.

Dr. S. P. Mengel reported for the delegates to the State Medical Society meeting, especially concerning the action taken by the delegates concerning illegal practitioners. Dr. Walter Davis and Dr. Gibby reported also concerning other activities at the State meeting.

The President appointed Dr. H. A. Smith, Chairman, Dr. Grover and Dr. Sheridan to examine the crippled children at the Halloween Party to be given at the Elks' Home by the Rotary Club of Wilkes-Barre.

The Secretary read a letter from the Secretary of the Wilkes-Barre Chamber of Commerce endorsing the request of the State Health Commissioner, Dr. Charles H. Miner, that all the members of the Chamber of Commerce have regular periodical health examinations.

The questions concerning the Postgraduate Medical Extension Group were again brought up and a discussion followed. Practically all the members of the society present at this meeting volunteered to join such a group, if it could be formed.

Dr. John B. Wolfe then read a very interesting paper entitled "Importance of Recognition of Cardiac Conditions in Pregnancy."

Dr. E. L. Meyers read a very exhaustive and instructive paper on "Heart Diseases in Pregnancy."

These papers were discussed by Drs. Long, Dodson and Kocyan.

At the regular meeting of the society held November 7th in the Medical Building, Dr. Robert N. Clark read an interesting essay on "The Schick test and the use of toxin-antitoxin in the prevention of diphtheria." Drs. Kocyan and Rynkiewicz furnished an interesting lantern slide lecture. H. Irvin Evans, M.D., Reporter.

PHILADELPHIA-DAUPHIN

October 24th

A demonstration of a case of ulcer nerve palsy due to cervical rib was made by Dr. Chas. S. Potts.

Report of a case of pipe stem embedded in the tongue for 63 days was given by Dr. William H. Schmidt, who cited the following case history: A man aged 72 years fell while walking with pipe in his mouth. There was much pain, bleeding, and the man suffered shock. After 24 hours the tongue and cervical glands became swollen and the tissues of the neck to the sternum were involved. For one week tube feeding was necessary and four teeth were extracted. Although there was pus coming from the right posterior dorsum of the tongue no opening was seen. On the fifth day there was severe hemorrhage, without recurrence. The swelling became indolent. In eight weeks a sinus developed under the chin. Finally a dentist discovered the foreign body and a pipe stem 1½x½x¾ inches was removed, followed by prompt healing. The case was illustrated by lantern slides.

Dr. John F. Culp, Harrisburg, Pa.: Mastoid Disease as seen by the General Practitioner.—Dr. Culp began his paper by a brief review of the anatomy of the mastoid process, and said that it was the general practitioner who must make the early diagnosis of mastoid disease. Ninety-nine per cent of acute mastoiditis begins as an acute suppurative otitis media, while chronic mastoiditis nearly always results from an old running ear. The mastoid process is made up of many cells, the largest the antrum, which is constant. The principal invading organisms are the staphylococcus, pneumococcus and streptococcus. The pathology is the same as that of the middle ear—fat necrosis and a breaking down of the cell wall, the formation of bony abscesses which coalesce, pressure necrosis, and absorption of the outer wall, with superiosteal abscess, or of the inner wall, with involvement of the labyrinth, sinus or the formation of a brain abscess. The three factors which tend to produce a mastoid in cases of otitis media are delayed drainage of the abscess, the type of organism, and the physical condition of the patient (e. g., eruptive fevers, infectious diseases, anemia, diabetes). In acute mastoiditis there may be a profuse and increasing discharge with little pain, or as is more common, little discharge with deep-seated pain. There are four points of tenderness—over the antrum, the mastoid tip, posteriorly over the course of the emissary veins, and in front of the ear. Sagging of the posterior superior canal wall may be seen on examination, fever may or may not be present and the blood usually shows a leukocytosis, with an increase in polymorphonuclears. X-ray is valuable in doubtful cases but must be used with care in infant diagnosis. Pain on manipulation of the ear may be diagnostic of furunculosis of the external canal, which is a condition that frequently must be differentiated. The patient should be purged, put on light diet and rest in bed. Intracranial complications, increasing discharge, facial paralysis and subperiosteal abscess are all indications for operation. Chronic mastoiditis should be eliminated by cure of the acute condition.

Discussion was opened by Dr. Jas. H. McKee, who said that the most common complication and sequel of pneumonia in children is otitis media. He has found mastoiditis metastatic from epiphysitis. A running ear is not always safe. Tuberculosis, serous or pyogenic meningitis, cerebellar abscess and sinus thrombosis may be found in connection with mastoiditis. Prophylactic treatment (adenoid and tonsil operation and vaccines) was urged.

Dr. E. B. Gleason said that mastoiditis may be traumatic or may be an osteomyelitis following meningitis or other conditions. The otorrhea in scarlet fever is infective. Enormous sequestra may occur also in tuberculosis and lues. In cases of chronic mastoiditis in which the hearing is good in the discharging ear and poor in the other, operation is contraindicated. Cholesteatoma in the antrum call for radical mastoid operation.

Dr. Wm. Egbert Robinson asked if repeated paracentesis is justifiable, and Dr. Culp, in closing said that if properly done, one incision is all that is necessary.

Dr. B. C. Hirst: Nature and Treatment of Climacteric Disturbances.—Dr. Hirst began by saying that the deposition of fat and loss of elasticity of tissue are changes frequently seen. The changes not generally recognized are the psychological and internal ones. At the time of the menopause there is a depression, possibly due to an instinctive appreciation that life has ended. Internally, there is atrophy of the ovaries and uterus, the endocrins change (e. g., the suprarenal cortex hypertrophies as does the anterior pituitary and the thyroid), old injuries become aggravated by muscle atrophy, the nerves become irritable, causing pruritis and an increase in onanism, while fibroid tumors and inflammatory conditions are benefited. The treatment should be hygienic, catering to the psychological condition by the utmost consideration and outside interests. Corpus luteum does some good but the whole ovarian substance is better. Since Nature's hint is so obvious a combination of anterior pituitary and thyroid is indicated. Dr. Hirst suggested the following formula: Post. pituitary gr. 1/10, ant. pituitary gr. ii, thyroid extract gr. 1/10, whole ovarian substance gr. ii. Some form of lime, such as calcium lactate, is also good, and sodium bromide or the elixir valerianate of ammonia aids in nervous crises.

In discussion, Dr. Davis S. Funk endorsed the endocrin treatment and gave a case report.

Dr. Clarence E. Phillips advised endocrin therapy in the menstrual disturbances of puberty, which may be also called the climacteric.

Dr. Harvey F. Smith said that the frequent enlargement of the thyroid in postoperative (thyroid) cases at the menopause is compensatory. Psychology is especially important in cases showing pelvic pains without definite pathology.

In closing, Dr. Hirst pointed out the contrasting action of adrenal and the pituitary-thyroid-ovarian. He advised the administration of calcium lactate, gr. xx every other night, and mentioned the possibility of administration of the endocrins in salol coated pills in order to avoid the destructive action of the gastric secretions. Mary A. Hipple, M.D., Reporter.

PENNSYLVANIA NEWS ITEMS

DEATHS

Dr. Ray David Cassady, of Etna, who was born in 1892 and was graduated from the University of Pittsburgh School of Medicine in 1920, died of pneumonia, October 22d.

Dr. William E. Powell, of Philadelphia died on November 5th. He was born in 1856, and was graduated from the Medico-Chirurgical College of Philadelphia in 1894.

Dr. Matthew F. Lorman, of Philadelphia, a Civil War veteran, died on October 13th, at the age of 80 years. He was graduated from Jefferson Medical College of Philadelphia in 1880.

Dr. Henry Morris Laing, of Dallas, aged 61 years, died on October 20th following a long illness. He was a graduate of the College of Physicians and Surgeons, Baltimore, Md., class of 1884.

Dr. Louise Schneider P. Blum, of Bethlehem, died of heart disease on October 13th, aged 69 years. Dr. Blum was a graduate of the Woman's Medical College of Pennsylvania, Philadelphia, class of 1879.

Dr. Willis W. McNamara, of Thompson, who was graduated from the Western Pennsylvania Medical College, Pittsburgh, in 1896, died on October 18th at a hospital in New York City, of bronchopneumonia. He was 55 years old.

Dr. Frank Simpson Smith, of Pittsburgh, a member of the Massachusetts Medical Society, died on September 6th of angina pectoris, aged 54 years. Dr. Smith was graduated from the Medical School of Harvard University, Boston, in 1895.

Dr. William H. W. Bull, of Douglassville, aged 64 years, died of cerebral hemorrhage on October 25th. Dr. Bull was a graduate of the Pulte Medical College, Cincinnati, class of 1885. He was formerly on the staff of the Walters Park Inn, Wernersville.

Dr. Thomas Brennan, of Shenandoah, was killed in an automobile accident on October 20th while on his way to attend a football game at State College. Dr. Brennan was born in 1895, and was graduated from the University of Pennsylvania School of Medicine, Philadelphia, 1920.

Dr. Henry K. Blough, of Elizabethtown, aged 79 years, died on October 20th of heart disease while attending a patient. Dr. Blough has practiced medicine for 54 years, and had served in the State House of Representatives for two terms. His wife and one daughter, Mrs. D. F. Kline, of Philadelphia, survive.

Dr. Alfred C. Rice, for 25 years a practicing physician in McSherrystown, died of bronchopneumonia on November 9th following an illness of a few days. Dr. Rice was born in Baltimore in 1876, and was graduated from the College of Physicians and Surgeons, Baltimore, with the class of 1897. At the time of his death he was a member of the surgical staff of the Annie M. Warner Hospital, Gettysburg. He is survived by his father, Dr. Geo. L. Rice, of McSherrystown, his wife and twelve children.

Dr. Aubrey Francis Higgins, formerly of Germantown, died suddenly in Oakland, California, on October 17th. He was born in 1874 and was graduated from the University of Pennsylvania School of Medicine in 1895. After practicing for two years in Philadelphia, he moved to Sacramento, California, where he practiced continually up until the time of his death, with the exception of two years during the World War, when he was stationed at the Government Hospital at White Plains, N. Y., and Fort Oglethorpe. His widow survives him.

BIRTHS

DR. AND MRS. ELMER E. GEISSLER, of Lilly, announce the birth of a son, Richard Henry, November 5th.

DR. AND MRS. J. EDWARD BOOK, of Newport, have announced the birth of a daughter, Theresa Jane Book, October 30th.

DR. AND MRS. JOHN F. MCCLOSKEY, of Philadelphia, are receiving congratulations upon the birth of a son, Paul McCloskey, October 26th.

ITEMS

DR. J. HARVEY FRONFIELD, of Media, has returned from a vacation trip in Europe.

DR. L. W. QUINN, of DuBois, has been touring Alaska during the past summer and fall.

DR. S. GILMORE PONTIUS, of Lancaster, has returned from a two weeks' trip to Rochester, Minn.

DR. J. R. HELLER, of Coplay, sustained a fractured leg during a football scrimmage a short time ago.

DR. D. A. WEBB, of Scranton, attended the New England Society meeting and spent some time in Boston hospitals.

DR. H. L. FOSS, of Danville, attended the meeting of the American College of Surgeons, held in Chicago recently.

DRS. C. E. THOMSON AND R. T. WALL, of Scranton, attended the meeting of the American College of Surgeons at Chicago.

DR. AND MRS. JOSEPH MCIVOR, of Philadelphia, have returned from a prolonged visit to the Doctor's former home in Dallas, Texas.

DR. A. F. HARDT and wife, of Williamsport, have returned from Chicago, where the Doctor attended the meeting of the American College of Surgeons.

DR. SAMUEL W. MILLER and Dr. Clarence R. Farmer, of Lancaster, attended the meeting of the American College of Surgeons, which was held in Chicago.

DR. A. J. HERMAN, Coroner of Snyder County, succeeded to the office of Sheriff upon the recent death of Mr. J. Frank Reitz, who died of apoplexy.

DR. ROBERT A. KILDUFFE, of Pittsburgh, has accepted an offer to take charge of the Los Angeles branch of the Pacific Wassermann Laboratories.

DR. C. E. ERVIN, of Danville, is spending several weeks at the Mayo Clinic, Rochester, Minn., where he is occupied with special lines of research work.

ANNOUNCEMENT HAS RECENTLY been made of the marriage of Dr. Arthur J. Greenleaf and Miss Kathryn Seitz, of Quarryville. Dr. Greenleaf has opened an office in Mountville.

DR. J. C. BROWN, of Williamsport, attended the annual meeting of the American Academy of Ophthalmology and Otolaryngology, which was held in Washington recently.

DR. WALTER A. LATHROP, Chief Surgeon at the Hazleton State Hospital, has been a patient in the Jefferson Hospital, Philadelphia, following an automobile injury some months ago.

DR. HARRY M. ARMITAGE, of Chester, attended the meeting of the American College of Surgeons in Chicago. He then went to Rochester, Minn., to spend some time in the Mayo Clinic.

DR. JOHN B. DEAVER, of Philadelphia, recently addressed a meeting of the Kansas City Alumni Society of the University of Pennsylvania at the University Club in Kansas following a dinner.

DRS. R. A. LEIBY, E. E. Everts, H. L. Bassett, J. B. Carrell, A. F. Myers and G. A. Parker, of the Bucks County Medical Society, attended an all-day clinic at the Mercer Hospital, Trenton, on October 30th.

DR. FRANK HARTMAN, of Lancaster, during the past month attended a special class at the University Hospital, Philadelphia, to learn the use of insulin in the treatment of diabetes, as well as its limitations.

DR. W. COLE DAVIS has been appointed Medical Director of the Philadelphia Hospital for Mental Diseases at Byberry to fill a vacancy created by the resignation of Dr. E. S. Bair. Dr. Bair resigned, having accepted the directorship of the Highland Hospital, Asheville, N. C.

DR. T. E. MENDENHALL has returned to Johnstown from a three months' hunting trip in the wilds of British Columbia. Dr. Mendenhall was accompanied by Dr. Kirk, of Pittsburgh, and he killed three mountain sheep and two goats.

DR. H. V. PIKE, Clinical and Community Director, State Hospital for the Insane, Danville, has gone to Philadelphia to take up postgraduate work on neuropsychiatry at the University of Pennsylvania. This course has been arranged by the Department of Public Welfare.

DR. MANGES, of Philadelphia, and Drs. Miller and Bloodgood, of Baltimore, conducted the annual clinic of the Fayette County Medical Society at the Uniontown Hospital on November 1st. Following the clinic, an informal subscription dinner was held in the Laurel Club rooms.

DR. HUBLEY R. OWEN, of Philadelphia, was reëlected President of the National Association of Police and Fire Surgeons and Medical Directors of Civil Service Commissions at the convention held in Atlantic City. Dr. Charles T. Russell, Jr., of Philadelphia, is Secretary, and Dr. William C. Ryan, of Philadelphia, is Treasurer.

THIRTY-FIVE MEMBERS of the Dauphin County Medical Society were guests of the Philadelphia County Medical Society on October 24th. The day was devoted to ward walks, surgical clinics, x-ray and radium demonstrations, followed by a dinner at the Rittenhouse Hotel. The evening program was shared in by members of both societies.

THE SCHUYLKILL COUNTY MEDICAL SOCIETY is fortunate in having a room set aside in the new Free Library Building at Pottsville, Pa., as its permanent headquarters. The Society will furnish the room and already has a splendid foundation for a good working reference library of books and journals. Dr. George R. S. Corson is the Chairman of a very active and energetic committee that is completing the necessary arrangements.

COLLEGE OF PHYSICIANS OF PHILADELPHIA

December 8, 1923.

A special meeting of the College will be held on Friday evening, December 14th, at 8:30. Students of the Graduate School of Medicine, hospital internes and senior medical students are invited.

PROGRAM

Dr. George E. de Schweinitz: The History and Influence of the College of Physicians.

Dr. John M. Thomas, President of the State College of Pennsylvania (by invitation): "Sufficient Ideals."

Dr. John A. Witherspoon, Nashville, Tenn. (by invitation): "What it Means to Be a Doctor."

Dr. Stuart McGuire, Richmond, Va. (by invitation): "The Profit and Loss Account of Modern Medicine."

The new Tuberculosis and Administration Buildings of the Philadelphia Hospital for Mental Diseases at Byberry, Philadelphia, were formally opened on November 8th, with Mayor Moore as the principal speaker. The Mayor paid tribute to the late Dr. C. Lincoln Furbush, Director of Public Health, who had been very active in the promotion of the two new buildings. Dr. Joseph C. Doane, Medical Director of Hospitals of Philadelphia, gave a historic outline of the project. The cost of the buildings was about $600,000. Dr. Blair Spencer, Director of the Department of Public Health, was in charge of the exercises.

The following additional appointments to the faculty of the Woman's Medical College of Pennsylvania, Philadelphia, have recently been announced: Two ex-service men, Dr. H. A. McKnight and Dr. Eugene C. Murphy, of Philadelphia, will serve under Dr. George Morris Dorrance, Professor of Surgery at the College. Dr. Lola D. McLatchie, of Toronto, Canada, has been appointed Associate Professor of Bacteriology. Dr. Walter G. Elmer, of Philadelphia, has been appointed Professor of Orthopedic Surgery and will also be a member of the surgical staff of the College Hospital. Dr. Winifred Alice Blampin, of Canada, has been appointed teaching fellow in Pathology.

The Northeastern Pennsylvania Jefferson Medical College Club held its annual dinner at the Westmoreland Club, Wilkes-Barre, Pa., on November 1st, at 7 p.m. A business meeting was held and the officers for the coming year were elected. Clinics were held in the morning and afternoon at the City Hospital and Mercy Hospital by members of the Jefferson Faculty; those from the College were Professors Ross V. Patterson, Brooke M. Anspach, Martin E. Rehfuss and William Hearne.

GENERAL NEWS ITEMS

The American Association for the Study of Goiter, composed of goiter surgeons, pathologists, anesthetists, internists, and radiologists, will hold its annual meeting in Bloomington, Illinois, the 23d, 24th and 25th of next January.

SUBSCRIPTION TO JOURNAL REDUCED

Attention is again called to the fact that the Board of Trustees of the American Medical Association has authorized the reduction of the annual Fellowship dues and subscription to *The Journal* to five dollars per annum, to take effect January 1, 1924.—*Jour. A. M. A.*, Nov. 3, 1923.

The first Leonard Prize of $500 for research work in x-rays has been given by the American Roentgen Ray Society to William Duane, professor of Bio-Physics at Harvard University, for his researches in x-ray spectra and methods of estimating the dosage of x-rays to be used in treating diseases. His investigations were carried on in the Jefferson Physical Laboratory and in the Warren Bio-Physical Laboratory of the Harvard Cancer Commission.

The American Journal of Roentgenology and Radium Therapy, the official organ of The American Roentgen Ray Society and the American Radium Society will appear in enlarged form in 1924, the increased pages being given to more illustrations, more abstracts and more original articles. Dr. A. C. Christie, who was Colonel in charge of roentgenology in the U. S. Army during the war will be the editor. Dr. James T. Case, Dr. H. K. Pancoast and Dr. W. Duane will be the associate editors, with a large collaborating staff of the leading roentgenologists in the country. The subscription price is $10.00 and Journal will be published as formerly by Paul B. Hoeber, Inc., New York.

NOTICE OF EXAMINATION FOR ENTRANCE INTO THE REGULAR CORPS OF THE UNITED STATES PUBLIC HEALTH SERVICE

Examinations of candidates for entrance into the Regular Corps of the U. S. Public Health Service will be held at Washington, D. C., at Chicago, Illinois, and at San Francisco, Cal., on January 7, 1924.

Candidates must be not less than twenty-three nor more than thirty-two years of age, and they must have been graduated in medicine at some reputable medical college, and have had one year's hospital experience or two years' professional practice. They must pass satisfactorily, oral, written and clinical tests before a board of medical officers and undergo a physical examination.

Successful candidates will be recommended for appointment by the President with the advice and consent of the Senate.

Requests for information or permission to take this examination should be addressed to the Surgeon-General, U. S. Public Health Service, Washington, D. C.

Dr. O. Pine queries: How does it happen that the average audience can hear more distinctly the medico buzzing about his fine buzz-wagon, when he has selected the proximity of the hall entrance for his rostrum, than when he purrs over his pearl of a paper as he adorns the solemn rostrum of the hall?

Dr. O. Pine queries: Have you not noticed that the medico is a better example to follow in personal cleanliness usually than the uniformed health inspector?

Dr. O. Pine queries: Cannot some one invent a smokeless medical section meeting-room? A smoke-consuming or a smoker-consuming device would prove equally satisfactory.

Dr. O. Pine queries: Where does the Christian Scientist or other cultist secure the notion that because he has followers among the alleged intelligent that he is representative of the truth? Have not in all ages, even the present, very intelligent men professed to believe in unscientific absurdities?

Dr. O. Pine queries: Anent the scarcity of rural medical service, how would it do to limit the number of motor, fishing and hunting trips to Canada as well as the numerous explorations of the Lincoln Highway, National Pike, and other traffic arteries, which are modernizing the country doctor into an eight-hour laborer instead of a twenty-four hour saddle-breaker?

Dr. O. Pine queries: Is it not regretful that at the Pittsburgh Session so many were chained to their sections that they had to forego the delightful discussions in the lobby anent the best car for Canadian trips?

Dr. O. Pine queries: When a brand new bit of medicine or surgery arrives in town with brass band entourage, can you not pick out easily the professional fashion followers who acrobatically will alight first in the band wagon, regardless of the harmony of the tunes played?

Dr. O. Pine queries: Can you doubt that the common doctor is waning after a female patient has informed you that you and your confrere, called in consultation, are wrong, since she had been in her pre-marital career a nurse, and therefore "knows all about diphtheria, which positively she has not got?"

THE MEDICAL SOCIETY OF DELAWARE

MINUTES OF THE HOUSE OF DELEGATES

MONDAY, OCTOBER 8, 1923

The meeting of the House of Delegates was called to order by the President, Dr. Dorsey W. Lewis, at 10:45 a. m., October 8, 1923, in the New Century Club, Middletown, Del. The Secretary, Dr. W. O. LaMotte, called the roll, the following delegates being present: D. W. Lewis, President; W. O. LaMotte, Secretary; H. W. Briggs, G. W. K. Forrest, C. J. Prickett, J. W. Bastian, C. P. White, G. C. McElfatrick, W. E. Bird, Wm. Wertenbaker, J. M. Stadter, W. F. Bonner, H. A. Jenkins.

On motion of Dr. Forrest, which was seconded and carried, the reading of the minutes of the last session was dispensed with.

Dr. Forrest made a motion, which was seconded and carried, that the President appoint a committee of three on nominations.

President Lewis appointed the following: Drs. C. J. Prickett, J. W. Bastian, and George W. K. Forrest.

Dr. Bird moved that the delegates proceed with the regular order of business while the committee on nominations was out. Seconded and carried.

President Lewis reported as follows: I have not prepared a formal statement as there is so little to report. I am quite sure that our Secretary has written a full and complete report and that it will be done much better than I could do it. As it would be merely a matter of repetition, I have left most of this work for him to do. He will inform the members of the activities of the State Society during the past year.

However, I do want to call the attention of the Society to the journal that is being published by our national organization—*Hygeia*. This, I think, is a step in the right direction, and should be encouraged, both in the way of publicity and by subscriptions to the journal. I am informed that our Secretary is to make a report on this subject; so I will not go into details.

I also want to congratulate the members of the Legislative Committee of the Society upon their work during the last legislative session. I feel that they were instrumental in getting through the Legislature matters which will be of considerable help to us, in spite of the fact that although the Governor appeared to be with us, when it came to real action he failed us and was influenced by the "fairer sex" and also by the different leaders of the commissions which were amalgamated by the Act passed by the former legislature.

Further than this I will leave the duty of reporting with our Secretary.

Secretary LaMotte reported as follows: This year has been one of progress in our Society. *The Pennsylvania Medical Journal* and the *Delaware State Medical Journal* have combined under the name of THE ATLANTIC MEDICAL JOURNAL, and now we have a first-class journal that is free to every member in good standing in our Society.

The Constitution Committee has finally brought the constitution up to date and has it ready for the Society's consideration at this annual session.

We have the satisfaction of knowing that the Tuberculosis Commission, the Child Welfare Commission and the State Board of Health are combined under one head, which should be a benefit to the whole state.

We have one hundred and thirty-two members in good standing. There are many other physicians who, one would think, would wish to be in the ranks of the organized medical profession. We fall short in many respects. We should make our Society so interesting that no one would wish to stay out, and we should be of such consequence that no practicing physician could well afford to stay out. While apparently more have been willing and even anxious to do their part, there is still lack of assistance and coöperation, which is a drawback to progress and influence.

It seems to the Secretary that the Nominating Committee should consult as many as possible, or at least give the matter more thought, before submitting their list, so that fewer will be elected to office or placed on committees who have not enough interest even to respond when sent a stamped envelope. This applies to county societies as well as to the State Society. The more active and progressive members of these component societies should see to it that the best and most dependable candidates are elected to office, particularly to the office of secretary.

Dr. Bird moved that the Secretary's report be accepted and filed. Seconded and carried.

The Treasurer, Dr. S. C. Rumford, reported as follows: Before submitting my report, I would call to the attention of the members of this Society the question of the Defense Fund, and ask for some action governing its use. For example: last year but three members from Kent County paid the $4.00 each to the State Society, the remaining twenty-one members paying only $3.00 each; so for these no deposit could be made in the funds. As things now stand, any one of the twenty-one members who contributed nothing last year is just as much at liberty to call upon this fund as are all the other members of the State Society, each of whom contributed his dollar. It will be difficult a few years from now for the executive officers to find out which members have always paid their dues in full; so you should take some action upon this matter, before it becomes necessary to help any member from the fund, which now amounts to $848.50.

During the year we received $1,107.12, with expenses of $491.35, leaving a balance to-day of $615.77. There will be a bill for THE ATLANTIC MEDICAL JOURNAL of about $275.00. The itemized statement is as follows:

Receipts

1922			
10/6	Balance in hand		$71 12
10/14	Rental of spaces	$20 00	
	Kent Co. Soc.	66 00	
	Sussex Co. Soc.	68 00	
			154 00

Receipts—(Concluded)

10/10	Space rental		5 00
10/25	Space rental	$5 00	
	Kent Co. Soc.	4 00	
			9 00
11/27	Sussex Co. Soc.		4 00
11/29	Kent Co. Soc.		4 00
12/18	N. C. Co. Soc.		317 00
1923			
1/5	Dover Bank dividend		17 50
7/6	Dover Bank dividend		17 50
9/24	Kent Co. Soc.	$56 00	
	Sussex Co. Soc.	80 00	
	N. C. Co. Soc.	372 00	
			508 00
			$1,107 12

Expenditures

1922			
10/17	Equitable Trust Co. (draft)	$8 40	
10/25	Hotel Richardson	90 00	
10/25	W. O. LaMotte	8 55	
12/12	K. A. Horner Co.	2 90	
12/22	Star Publisbing Co.	54 00	
1923			
1/22	Mercantile Printing Co.	10 25	
3/8	Star Publishing Co.	54 00	
4/2	Wilmington Savings Fund Soc. (Defense Fund 1922)	123 00	
9/24	Equitable Trust Co. (draft)	13 25	
9/27	Wilmington Savings Fund Soc. (Defense Fund 1923)	127 00	
			491 35
	Balance on hand		$615 77

(Signed) Samuel C. Rumford, *Treasurer.*

Wilmington, Del., Oct. 5, 1923.

Approved 10-8-23 } H. W. Briggs,
Dorsey W. Lewis,
W. O. LaMotte.

Dr. Briggs: "There seems always to have been here in Delaware a question as to what the duties of the Councilors are. Before Dr. LaMotte attended the Conference of Secretaries in Chicago about a year or two ago, he came over to me to inquire what the Councilors had done since they had been in office. It seems that in some of the other states the Councilors are very active men, but I do not know just what they do. I should be very glad to know more.

"My idea of the Councilors, since I have been one, is that they are a sort of a board of censors or board of reference. One of the duties, I know, is to decide whether or not those who apply for help from the defense fund are eligible to receive it, and upon their decision rests the granting or refusal of such assistance. I do not know what the other duties are. In the state of Delaware, Councilors have only to attend meetings of the House of Delegates. .

"If Dr. LaMotte would give us some information along this line, I should appreciate it, as I should be glad to do anything the duties of the office call for. I should like to know what he found out at the Conference."

Dr. LaMotte: "The duties of the Councilors are definitely laid down in the By-Laws, which will be taken up section by section this afternoon. I think they are to be included in the new constitution, the same as in the present one. At the Secretaries' Conference in Chicago, the Councilors had a great deal of work to do."

At the suggestion of Dr. Briggs, Dr. LaMotte read the section in the By-Laws regarding the councilors.

Dr. LaMotte: "One of the secretaries from a southern state told us at the Secretaries' Conference that the finances of their society came, to a large extent, from the Councilors, as the latter were supposed to pay from ten to twenty-five dollars a year each in order to become Councilors. The other members paid less. I think the state was Alabama."

Dr. Bird, Editor for the Journal: "I have nothing of importance to tell aside from the report of the Committee on Publication. We are endeavoring to have the Delaware section compare favorably with that of the other state under the same cover, namely, Pennsylvania, and so far some little progress has been made, though we have a long way to go as regards quantity and quality of material. I am personally responsible for the editorials, although I write only a few of them. The papers are printed throughout the year, and in the future the Committee, I feel sure, will not only maintain such a standard as has already been set, but will try to improve it.

"Mention was made a few minutes ago regarding the item in the Treasurer's report amounting to $275.00 for The Atlantic Medical Journal. That seems a fair-sized sum for a membership such as ours; but when you consider the cost of the old Delaware Journal on a distribution of 150 copies at $225.00, or $1.50 per capita, or based on the present membership of 132 or 136, at a cost of $1.75 for the old Journal, while the new Journal is $2.00 per capita, I think the change is advantageous.

"Any further details will be found in the report of the Committee on Publication."

Dr. Bird moved that the report on scientific work be withheld until Dr. Bastian's return. Seconded and carried.

Dr. Bird stated that he had no report to make on public policy and legislation, and to his knowledge, the committee had never been called in session, all of the work in this field having been done by the similar committee of the New Castle County Society.

The Committee on Medical Education and the Committee on Necrology had nothing to report.

The Committee on Publication made the following report:

Under the authority granted by this body at its last annual session, your Committee has arranged for the merger of our Journal with that of the Pennsylvania Society, effective April 1, 1923, under the title of "Atlantic Medical Journal," a monthly of 96 pages and cover, with 19 times the reading matter of our former Journal. We believe this merger is a great improvement over the old arrangement, and is one that is destined to become more and more valuable to our members. The cost has increased from $1.50 per member to $2.00 per member, or 33% increase in cost, as against an increase of 1,900% in reading matter. This Society is entitled to three of the six members of the joint Publication Committee, an especially generous consideration, in view of the fact that our membership is less than 200, while the Pennsylvania Society numbers over 7,200.

The editorship of the Delaware section of the Atlantic is imposed on some willing person, appointed by the committee, Dr. Bird being the present incumbent. Reporters have been appointed in twelve of the larger centers, but with surprisingly little response. We should rejoice if all our members, and especially these reporters, would kindly assist the editors in their gratuitous services. Respectfully submitted,

Albert Robin,
W. O. LaMotte,
W. E. Bird, Chairman.

It was moved, seconded and carried that the report of the Committee on Publication be received and filed.

Dr. LaMotte read the following letter signed by Dr. Walter F. Donaldson, Secretary of the Medical Society of the State of Pennsylvania:

> We have just concluded the seventy-third annual session of the Medical Society of the State of Pennsylvania, and feel that it was the most successful we have ever held.
>
> We so thoroughly enjoyed the report of Dr. T. B. Appel of a former visit to your Society, and a visit from Dr. W. Blair

Stewart of the Medical Society of New Jersey, that we have decided in the future to send delegates from our Society to our neighbors.

We, therefore, have great pleasure in commending to your courteous reception Dr. Adam J. Simpson, of Chester, Pennsylvania, as our official delegate. Dr. Simpson is the retiring chairman of our section on medicine.

Looking forward with pleasure to meeting you in Chicago at the State Secretaries' Conference in November, I remain,

(Signed) Walter F. Donaldson, Secretary.

Dr. Bird moved that the House of Delegates recess until the Nominating Committee returned. Seconded and carried.

Dr. Forrest, acting chairman, read the following report of the Nominating Committee: First Vice-President, I. J. McCollum; Second Vice-President, Wm. V. Marshall; Secretary, W. O. LaMotte; Treasurer, S. C. Rumford; Councilor, W. T. Jones; Delegate to A. M. A., W. O. LaMotte (hold over); Alternate, W. F. Bonner (hold over); Delegate to Maryland Society, F. R. Armstrong; Delegate to Pennsylvania Society, Walter S. Lumley; Delegate to New Jersey Society, James Martin; Delegate to New York Society, E. H. Lenderman; Delegates to State Pharmaceutical Society, W. E. Haines, J. B. Derrickson, C. Anthony Beck; Committee on Scientific Work, E. R. Mayerberg, Jos. S. McDaniel, O. V. James; Committee on Public Policy and Legislation, John Ball, Wm. V. Marshall, Jr., G. Frank Jones; Committee on Medical Education, Jos. Bringhurst, B. B. G. Blackstone, I. L. Chipman; Committee on Necrology, W. H. Kraemer, C. deJ. Harbordt, H. R. Burton; Committee on Publication, W. E. Bird, Albert Robin, W. O. LaMotte; Committee on Health Problems in Education, Chas. P. White, Jos. P. Wales, Wm. P. Orr, L. A. H. Bishop, S. M. Zion; Hospital Committee, M. I. Samuel, Samuel Marshall, W. O. LaMotte; names to be submitted to the Governor for his selection of two as members of Medical Examining Board: H. W. Briggs, Presley S. Downs, Jos. S. McDaniel, C. J. Prickett, James A. Draper, Joseph Barsky, Chas. H. Boehm, Lawrence J. Jones, H. M. Manning, Richard C. Beebe.

Dr. Bastian, of the Committee on Scientific Work, reported that last winter he heard a gentleman from Canada talk in Philadelphia on diabetes, explaining and discussing the use of insulin, which has revolutionized the treatment of selected cases of diabetes. He stated that he did not know of anything else in the scientific line worth reporting.

Dr. Briggs, reporting for the Committee on Hospitals, stated that the only duties of this Committee of which he knows, are the receiving of various inquiries from the American Medical Association regarding the standing of the hospitals in the community. They send out requests to this Committee to investigate the hospitals within their jurisdiction and report back, with the idea of listing these hospitals under the different classes, A. B. and C.

Dr. Briggs stated that there is a very important matter in connection with the Delaware Hospital to which he wanted to call the attention of those present. "The Delaware Hospital at Wilmington has always been listed by the American Medical Association as a class-A hospital, and yet recently one of the interns, who is a very excellent man and who had served more than a year (about 18 months), applied to Pennsylvania for endorsement, having passed the Delaware Board. Only recently he wrote back that they absolutely refused to endorse his license on the grounds that the Delaware Hospital was not giving sufficient intern training, especially as regards x-ray and laboratory work. That is a very serious question, and has already been taken up by the executive committee of the hospital, which will try to correct it.

"Some few years Dr. Baldy, then president of the Pennsylvania State Bureau of Medical Education and Licensure, came down to Wilmington, made an inspection of the Delaware Hospital and reported unfavorably. That objection has never been removed, but there is no doubt that an intern in the Delaware Hospital gets just as good if not better training than is given by some of the smaller hospitals in Pennsylvania, although these hospitals are on their approved list. If anything could be done here to help remove that condition, it would be a very good thing to do. It means that if a graduate of the University of Pennsylvania becomes an intern at the Delaware Hospital they will not let him take the Pennsylvania State Board examinations. It is a serious matter."

Dr. Briggs recommended that, if possible, a resolution be passed and sent to the State Board of Medical Education and Licensure of Pennsylvania.

Dr. Wertenbaker stated that he did not think a resolution would do any good, as he had heard from good authority that the Pennsylvania State Board had stated that they are going to fill the Pennsylvania hospitals with interns, and that that was the way they were going to fill them. He said, "You can see what that is going to mean."

Dr. Forrest recommended that we refer not only to the Delaware Hospital but to our other hospitals as well, especially to the P. & S. and Homeopathic, which come under our State Board. He further stated that this Society certainly should make an effort to give students who come here to complete their education, a training that will be acceptable to other Boards after they have been passed by our Delaware State Medical Examining Board.

Dr. Briggs stated that the Pennsylvania Board not only will not reciprocate after we examine the candidates, but they will not even let them take the examination of the Pennsylvania State Board of Medical Education and Licensure.

It was moved, seconded and carried that a committee of three be appointed to draft a set of resolutions to be submitted to the proper authorities in Pennsylvania, in an endeavor to have the interns from the hospitals in Delaware accepted for examination in Pennsylvania.

The committee appointed by the President was as follows: Dr. Henry W. Briggs, Dr. J. W. Bastian, Dr. W. E. Bird.

Dr. Briggs stated that this matter came up last fall, and that he communicated with the President of the Pennsylvania Board of Medical Education and Licensure, Dr. I. D. Metzger, of Pittsburgh, Pa. Dr. Metzger wrote back, stating that there is no reason why the Pennsylvania colleges should not furnish interns for the Delaware hospitals. He inclosed a pack of letters and rules, so that we might see whether we complied with their requirements. These included a large volume of technical matter. We do not come up to the requirements literally, but we do meet them as well as most of the approved hospitals of Pennsylvania do, hospitals such as Lancaster, Coatesville, Chester, etc. They require three months' service in the laboratory in Pennsylvania, and nothing less.

Dr. LaMotte stated that if they accept the Chester, Lancaster and Coatesville Hospitals they are discriminating.

Dr. Briggs said, "This attitude is all wrong and I am going to take up the question personally with the men in Philadelphia. I do not believe action by this Society will do any special good, but it will be another peg in the efforts that are already being made."

Dr. McElfatrick said that there is plenty of work in the laboratory and x-ray room if the interns will come down there. Dr. Zimmerman seemed to be the only one in the hospital who was interested. The other three or four interns could not be induced to enter the x-ray room; they seemed afraid they were going to be burned. There is plenty of work for the interns every morning, as help is needed.

Dr. Stadter said, "The P. & S. Hospital has an intern who comes from the South where they do not require hospital experience. We cannot get them from Pennsylvania. I remember that Dr. Baldy placed the P. & S. on the accredited list, but when he got back to Philadelphia he changed his mind."

Dr. Briggs: "One of the permanent pieces of legislation taken up at the General Assembly was the adding of a year's necessary experience in a hospital before an intern can take our State Board examinations. We have always respected the opinions of the societies of other states, and we were very much disgusted with this comeback, especially when we know that this man Zimmerman is a very excellent man."

Dr. LaMotte read the following report from the Committee on Health Problems in Education:

> The Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, created at the suggestion and request of the American Medical Association, has been at work for a number of years. Several important reports, pamphlets and charts issued by this committee have been received with widespread interest in educational circles and some of these are now much in demand. Educational organizations are looking to medical organizations for guidance in matters pertaining to health in schools and with respect to health teaching.
>
> Under the plan adopted by the National Joint Committee it is proposed that each state medical association shall have a committee on health problems in education. This committee is expected to seek the appointment of a like committee from the state teachers' association, thus making it possible for each state to have a Joint Committee on Health Problems in Education. Most of the state medical associations now have such a committee.
>
> If your association has no Committee on Health Problems in Education, it is hoped and earnestly requested that one will be appointed in the near future and instructed to seek the appointment of a committee by the state teachers' association to act with it. The legislatures of most of the states will meet in January of 1923. The Joint Committee as above suggested can give valuable aid in securing desirable legislation or in opposing objectionable measures.
>
> The essential purpose of this movement is to secure effective coöperation of educators and physicians in improving health conditions and especially to effect an improvement in the methods now being used in health education.
>
> Where active committees are already in existence it is suggested that their personnel be continued unchanged, because the problems with which these committees must deal will not be quickly solved. These problems are important enough to demand and to receive the continued consideration and attention of experienced workers.
>
> If your state association has a Committee on Health Problems in Education, please advise us whether any changes have been made in its personnel within the last year. If no such committee is now in existence in your state, please be kind enough to inform us promptly on its appointment and provide us with a list of the personnel.
>
> The National Committee desires to render all possible assistance to the state committees and to receive from them helpful suggestions and reports of progress.
>
> (Signed) Chairman John M. Dodson,
> Committee on Health Problems in Education.
> Acting Secretary Olin West,
> Council on Health and Public Instruction.

Dr. Bastian said he thinks the Committee has made considerable progress, and moved that the report be accepted. Seconded and carried.

The following report was submitted by the Committee on Revision of the Constitution:

The above named Committee, appointed by this House at the session of 1921, has, after much thought and effort, evolved a document to replace the old Constitution and By-Laws of 1904, which had become somewhat antiquated. In view of the fact that this Society is a corporation, the charter from the state of Delaware corresponds to the usual constitution. Accordingly the various features of the old documents have been fused and a new set of by-laws prepared from them with such alterations as have been enacted by this House from time to time, or as seemed best in the judgment of the Committee. There are no vital or radical changes; the instrument has merely been modernized.

This document will be presented to the Society, sitting as a constitutional convention, this afternoon (October 8, 1923). Authority has already been granted to print 300 copies of the document, as adopted by the Society,

Respectfully submitted,
G. W. K. Forrest,
W. O. LaMotte,
W. E. Bird, Chairman.

It was moved, seconded and carried that the report of the Committee on Revision of the Constitution be received and filed.

Dr. Briggs suggested that the report of the Auditing Committee be postponed until the other members were present. After a little discussion, it was decided that the President and Secretary were part of the Auditing Committee. Dr. Forrest, therefore, moved that the Treasurer's report be submitted to the Auditing Committee. Seconded and carried.

Dr. LaMotte read the following report of the delegate to the American Medical Association:

The Sessions of the House of Delegates were well attended. From the beginning, there was fear shown by some that a movement might be started to hamper the Editor-Manager, such as the dissociation of the editorship and the general managership of the Association. You are aware of the charges and allegations that have been broadcasted. These have come from the disgruntled who have not offered a single suggestion for the betterment of the Association. There was not one in the House of Delegates who voiced a word of protest about the Editor or about the American Medical Association, but there were many who sang their praises. When Dr. Simmons became Editor-Manager there were 800 subscribers to the Journal of the American Medical Association; now there are more than 70,000. I think, if you will take the trouble to inform yourselves, you will conclude, as was stated at the session, that "there is wholly no evidence of any intent to assume dictatorship, closed corporation policy, or the tendency to group, district or class protectionism or favoritism."

President de Schweinitz said, "The success of any large organization and its steady advancement must always be associated with supervision made possible through a board of directors; and, in this respect, our Board of Trustees has given us unselfish service."

President-Elect Wilbur said, "It has been my fortune and misfortune sometimes to deal with a number of boards of trustees of all sorts, and I can say quite frankly that the Board of Trustees of the American Medical Association is just as good as any board of trustees in the country."

An amendment to the constitution was adopted, extending the term of the trustees to five years and providing that no trustee should serve more than two consecutive terms, and in accordance with the constitution, was laid over to be acted upon next year.

The report of the Bureau of Legal Medicine and Legislation stated that the Veterans' Bureau again stands sponsor for the doctrine that headlice, syphilis, gonorrhea, tuberculosis and intestinal parasites can be cured by spinal adjustment.

The following resolution was unanimously adopted:

> Whereas, For the first time in the history of organized medicine in New York State, and so far as can be learned, in the entire United States, a Governor has summoned representatives of the organized medical profession in conference to help solve important questions affecting public health, medical education and the practice of medicine; therefore, be it
>
> *Resolved*, That the House of Delegates approve the efforts of the Governor of New York State in seeking, through the organized medical profession, expert opinion and advice on the topics of public health, medical education and the regulation of the practice of medicine; and be it further
>
> *Resolved*, That similar cöoperative relationships should be encouraged throughout the several states of the Union.

. Since, as the President of the American Medical Association says, it is as unsafe for a community to make health laws without using the authoritative knowledge of the doctor as it is to build a bridge without the use of a trained engineer to approve the plans, I would recommend that a similar resolution be passed by this Society.

I have brought some San Francisco papers to show you the extensive publicity they gave to the work of the Association. From two to four pages each day were devoted to the Association news, and I want you to see them, as you have never seen such publicity given us in the East.

(Signed) W. O. LaMotte, Delegate.

It was moved, seconded and carried that the report of the delegate to the American Medical Association be accepted and filed.

Dr. Briggs: "It has been my custom to attend the meeting in Chicago of the Federation of State Medical Boards, and for a number of years I have made a report of the meetings. Last year I was ill and could not attend. From accounts I received, it was a very successful meeting. We now have 28 states that are members of this federation, and it is gradually becoming a better organization and reaching more of a standard that is being adopted by all the states. I am sorry that I cannot give anything more as to just what happened last year."

Dr. Jenkin, reporting on other state societies, stated that he attended the convention of the Medical Society of New Jersey, at Haddon Hall, Atlantic City, N. J. They had some very excellent papers and a very big meeting in comparison with our Delaware meetings. He said that he did not arrive early enough to hear what they did at their House of Delegates. However, they had a good attendance and when members were called on they were always right on the job.

Nothing was reported under unfinished business.

Dr. Bonner reported that the Safety Council, under the new Act, would like suggestions regarding the optical requirements for paid drivers of automobiles. He stated that the requirements so far proposed agreed with those of the U. S. Army regulations.

Dr. Forrest moved that a committee of three oculists be appointed to draft a resolution as to the degree of vision necessary for such persons operating machines, and to present it to the Society. Motion not carried.

Dr. Bonner: "In most of the states, the Secretary is the one selected as a delegate to attend the meeting of the American Medical Association, and I should like to make a motion that it be done in this state."

Dr. LaMotte stated that the Secretary might not always be the proper person to go, or might not be in a position always to go. Motion not carried.

Dr. LaMotte read the following resolution:

Be it *resolved*, that the Medical Society of Delaware adopt the following resolution which was unanimously passed by the House of Delegates of the American Medical Association at their annual meeting in San Francisco, June, 1923:

> Whereas, For the first time in the history of organized medicine in New York State, and so far as can be learned, in the entire United States, a Governor has summoned representatives of the organized medical profession in conference to help solve important questions affecting public health, medical education and the practice of medicine; therefore, be it
>
> *Resolved*, That the House of Delegates approve the efforts of the Governor of New York State in seeking, through the organized medical profession, expert opinion and advice on the topics of public health, medical education and the regulation of the practice of medicine.

Dr. Bird moved that the resolution be adopted. Seconded and carried.

Dr. LaMotte read the following resolution which was attached to the American Peace Award's letter of September 27th:

> Whereas, The Medical Society of Delaware believes that the subject of our foreign policy should be carefully considered by the American people, and
>
> Whereas, We feel that any project which promotes popular understanding of the ground work of world peace can be only healthful, and
>
> Whereas, We believe that the solution of the problem of the relation of the United States to the rest of the world can best be worked out without partisan bias and without the heat and distortion that is inevitable if this subject is made an issue in a political campaign; therefore, be it
>
> *Resolved*, That the Medical Society of Delaware, in convention assembled, heartily endorses the effort of the American Peace Award to find a practicable plan acceptable to a majority of the American people and to the American Senate, by which the United States may coöperate with other nations, looking towards the peace of the world.

Dr. Bird moved that the above resolution be adopted. Seconded and carried.

Dr. LaMotte then read several communications which he had received since the last meeting.

Dr. Briggs moved that the scientific program, as arranged for the general session, be approved. Seconded and carried.

Dr. LaMotte called attention to the fact that it might be necessary for the President to change or switch around a few of the papers in order to make it convenient for the visiting doctors.

As regards the selection of a meeting place for next year, Dr. Forrest suggested that instead of meeting on Monday and Tuesday, the Society meet the first Tuesday in October and the following Wednesday, or the first Wednesday and the following Thursday.

After a little discussion, Dr. LaMotte read from the By-Laws that the House of Delegates shall select the dates and place of meeting.

Dr. Bastian stated that if we meet at Rehoboth, hotel accommodations will have to be arranged for well in advance, because of the busy season.

Dr. LaMotte stated that if the meeting is held in Rehoboth, it will be necessary to appoint an acting Secretary in his place. The last time we met there, he said, he could neither get the place of meeting nor the name of the person to whom to write for information, etc., and when we got down there we had a terrible time.

Dr. Bastian said that he mailed several letters and had enclosed stamped envelopes, but they were neither answered nor returned.

Dr. Hopkins said that he would suggest Milford, Del., as they have good hotel facilities, the people are hospitable, it is a progressive kind of town and a very nice place in which to hold our meeting. He then extended a formal invitation on behalf of the citizens of Milford, to the Society, to meet there next October.

Dr. Briggs: "In the past it has not been necessary to hold the meeting in a given county because a man in that county happens to be President. The question arising is this: how far have most of the men to go to attend this meeting? Will we have more than if we have it in Wilmington?"

Dr. Forrest: "The men from Sussex have not seemed to care to attend their State Society meetings, but I understand do attend their local county meetings. Our one idea would be to stimulate interest in the State Society as well as in the county society, and to be courteous to our members. I am willing to meet any place in the state.

"I should like to change the time from the second Monday and following Tuesday to the second Tuesday and following Wednesday in October."

It was moved, seconded and carried that the meeting of the Medical Society of Delaware be held on the second Tuesday in October and the following Wednesday, at Milford, Del.

Dr. White stated that at the last meeting of the New Castle County Medical Society a resolution was passed inviting the members to bring up the subject of alcohol, which he thought a very important matter. He then read an extract from the minutes of the meeting.

Dr. Briggs: "This question has been up before. It was taken up one time, as you know, at the special session of the Legislature, when we introduced a bill amending the Klair Law so that licensed physicians could give prescriptions for medicinal purposes. I was appointed chairman of the Legislative Committee to look into the matter. I wish to say that up until that time we thought the Klair Law was unconstitutional. The Constitution of the United States very plainly states in the Eighteenth Amendment that whisky shall be prohibited except for sacramental and medicinal purposes. Our state law says the same thing. Any ordinary man reading it would think it unconstitutional. I was advised to go to Robert Richards, as he is the best constitutional lawyer in this state and has more influence with the judges than any other man. I called on him and talked the matter over with him and he changed my opinion considerably.

"In the first place, he said in his own opinion it was absolutely constitutional. He explained it this way: The Federal Government made a certain law providing that you cannot use liquor for beverage purposes, that you may use it only for medicinal and sacramental purposes; but your state can come right in and make a law prohibiting you from using it for a beverage or for medicinal purposes. He said that the only chance to change the law would be to prove in court that alcohol was a necessity.

"Mr. Richards was to write me a letter within a week stating just what he would charge to take up this case. Two weeks later I called on him, and he said that he had overlooked the matter but would communicate with me; but he never did. However, I have changed my opinion very materially about this matter since my talk with Mr. Richards."

Dr. Wertenbaker moved that "we dispense with the matter at the present time, as it is not an auspicious time to take it up."

At 1 p.m it was moved, seconded and carried that the House of Delegates recess until 2 p.m.

After the recess, Dr. LaMotte advised that the Auditing Committee, consisting of Dr. Briggs, Dr. Lewis and himself, approved the Treasurer's report. He stated that the Society had over $600.00 in bank belonging to the general fund and over $800 belonging to the defense fund.

Dr. Forrest moved that the auditors' report be accepted and filed. Seconded and carried.

Dr. Briggs read the following resolution:

Whereas, The state of Pennsylvania has refused to license by endorsement a physician duly licensed by the state of Delaware, because of alleged insufficient training as an intern in the Delaware Hospital, and

Whereas, This hospital has been rated in class-A by the Committee on Hospitals of the American Medical Association; therefore be it

Resolved, That the House of Delegates of the Medical Society of Delaware, in session at Middletown, October 8, 1923, go on record as protesting against such decision and ask that an investigation by the proper authorities be made with a view to putting the hospitals of Delaware on the approved list of the Pennsylvania Board of Medical Education and Licensure. Be it further

Resolved, That a copy of this resolution be forwarded to the Pennsylvania Board by the Secretary.

The resolution was unanimously adopted.

The motion to adjourn sine die was carried.

Dorsey W. Lewis, President;
W. O. LaMotte, Secretary.

BOOKS RECEIVED

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene, and other topics of interest to students and practitioners. By leading members of the medical profession throughout the world. Volume III. Thirty-third series, 1923. Philadelphia and London: J. B. Lippincott Company.

Abt's Pediatrics. By 150 specialists. Edited by Isaac A. Abt, M.D., Professor of Diseases of Children, Northwestern University Medical School, Chicago. In eight octavo volumes totaling 8,000 pages with 1,500 illustrations, and separate Desk Index volume free. Now ready—Volume I, containing 1240 pages with 284 illustrations. Volume II, containing 1025 pages with 180 illustrations. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, $10.00 per volume. Sold by subscription.

A Textbook of Anatomy and Physiology. By Jesse F. Williams, M.D., Professor of Physical Education, Teachers' College, Columbia University, New York City. 12mo of 523 pages with 369 illustrations. Philadelphia and London: W. B. Saunders Company, 1923. Cloth $3.00 net.

Introduction to Medical Biometry and Statistics. By Raymond Pearl, Professor of Biometry and Vital Statistics in the School of Hygiene and Public Health and of Biology in the Medical School, The Johns Hopkins University. Illustrated. Philadelphia and London: W. B. Saunders Company, 1923. Price $5.00 net.

The Examination of Patients. By Nellis B. Foster, M.D., Associate Physician to the New York Hospital; Associate Professor of Medicine at Cornell University, College of Medicine. Octavo of 253 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, $3.50 net.

Clinical Diagnosis. By Laboratory Methods. A Working Manual of Clinical Pathology. By James Campbell Todd, M.D., Professor of Clinical Pathology, University of Colorado. Fifth Edition, Enlarged and Reset. Octavo of 762 pages with 325 illustrations, 29 in colors. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, $6.00 net.

Gynecology. By William P. Graves, M.D., Professor of Gynecology at Harvard Medical School. Third Edition, thoroughly revised. Octavo volume of 936 pages with 388 half-tone and pen engravings and 146 microscopic drawings, 103 of the illustrations in colors. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, $9.00 net.

(Continued on page xiv.)

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ADDRESS

THE FUTURE OF PEDIATRICS*

J. CLAXTON GITTINGS, M.D.
PHILADELPHIA, PA.

Just six years ago the Pediatric Section of this Society held its first meeting in this city. Many of you must remember that those who organized the section had some difficulty in persuading the Council of the need for separation from the Section on Medicine, although this need was clearly foreshadowed in 1880 when the Section on Diseases of Children of the American Medical Association was organized. Children cannot be blamed for following the example of their parents—the less when the parents' act has proved to be so eminently successful.

The results accomplished in this Section have more than justified the judgment of its founders. A registration of 45 at its first session has increased to a registration of 110 in 1921.

The range of subjects considered at the various sessions includes a majority of the important diseases of early life. A consistent visitor to all of the sessions, therefore, would have had a complete course of postgraduate lectures in pediatrics besides learning a great deal of the possibilities of prevention of disease in early life—a subject which can be viewed as a public health measure of extreme importance.

This section, therefore, has reached a mature growth and is well past the experimental stage. To be selected as its Chairman is a signal honor of which I have a full appreciation, albeit that the mere statement seems an entirely inadequate expression. Permit me to emphasize, then, the great pleasure which it gives to preside over this honorable body.

While congratulating ourselves on our general worthiness, however, we must avoid the pitfall of complacency. No society can afford to stand still. Development and betterment in various ways must follow. Failure to develop is a sure forerunner of atrophy.

The discoveries and changes in medicine are proceeding at such a rapid rate that with the time-honored plan of having various papers presented by different members and guests, we can reasonably expect to be both interested and enlightened at our meetings. Would it not be possible, however, to improve on the plan by requiring each city in which the annual meeting is held, to prepare a clinical conference for one session? This should be held preferably in the amphitheater of a hospital so that the actual patients can be demonstrated. This method is so successful in various other associations that it can hardly fail to be approved by our members.

I should also like to urge the members to make the sessions an open forum for discussion of the papers. We should feel at perfect ease in these meetings, free to ask questions and free to offer criticism. Friendly, constructive criticism hurts no reasonable man. Confidence in one's ability to speak out his thoughts can never be gained except through practice, and the opportunity is presented here and now.

In the reports of previous meetings it is noticeable that the "Chairman's Address" is followed by the words "No discussion." Presumably this has been out of courtesy to the Chairman. Logically, however, there is no reason why his address should not be discussed—if the members see fit.

The history of the formation of this Section furnishes a thought as to a subject for this address which we will call "The Future of Pediatrics."

The separaton of pediatrics from general medicine proper was a perfectly logical part of the whole movement toward specialization. The latter was an inevitable sequence to the development of medical knowledge. In the middle of the last century one mind could compass most of what there was to know of medicine. Even at that time this was no mean accomplishment and, like Goldsmith's country schoolmaster, of the physician no doubt "Still the wonder grew, that one small head could carry all he knew."

Toward the close of the century came the realization that special proficiency only could be attained by special application to one branch of knowledge—the tree had grown too large to be encircled by one pair of arms.

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*The Chairman's Address, delivered before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, October 2, 1923.

The justification for the separation of pediatrics as a specialty lay in the innumerable differences between child and adult in structure and function of mind and body, both normal and diseased, and in the consequent variation of prophylactic, diagnostic and therapeutic measures for the prevention and relief of disease. Many adult diseases have their counterpart in those of early life but almost without exception, their recognition, course and management vary more or less widely. Pediatrics occupies a unique position in that it is practically entirely independent of the internal medicine of adults.

The ophthalmologist must know something of general medicine of both child and adult before he can properly evaluate all the relationships between the eye and the body. The dermatologist actually has to be fully cognizant of many general diseases in his diagnosis and therapy of affections of the skin. The same is true, to a greater or less degree, of every other specialty of medicine and surgery.

Pediatrics, however, is the internal medicine of the child, who has no past, apart from hereditary influences, and whose only other contact with what we may call adult medicine is in prognosis. The psychology of the parent or nurse in its relation to the child's training and consequent conduct is an extremely important factor which has to be taken into account very often, but the unwisdom of the parent hardly belongs to the problems of adult medicine.

There was ample reason for the development of the specialty of pediatrics and, in spite of the fact that many physicians are unwilling to recognize it, pediatrics has reached its adolescence and has entered the field as a competitor for all special honors.

There are two main types of general medical practice, urban and rural. In the past it has been practicable to develop specialties only in urban practice. As soon as a community, however small, establishes a hospital with reasonably adequate equipment, the practice of physicians residing within a ten mile radius of that hospital becomes essentially urban to the extent that the hospital provides the opportunity for specialization.

Specialization merely means special study and experience. A hospital furnishes the opportunity for study and, by grouping many individuals under one roof, multiplies experience without sacrificing the priceless factor of time. There is no absolute reason, therefore, why a community which is thickly populated enough to support a hospital, should not also support specialties.

Such is not the case with strictly rural communities but with the improvement in roads and conveyances, to say nothing of the possibilities of air-born contrivances, we will find fewer and fewer isolated family units.

We will submit, therefore, that many physicians who consider themselves country practitioners and who feel that they must live up to their obligations to treat the entire family can develop into pediatricians or internists if they so desire.

The best time to make such a decision is at the beginning of one's career. It is difficult to break away from a family practice and the habit, once formed, of being the counsellor of the family, is not easily relinquished. For this reason, the physician who has a leaning towards a specialty should begin his work in that field at the earliest possible moment—before assuming the responsibilities of a family and at a time when he can best afford a period of lean years. The difficulty is to look far enough into the future to see that privation now means special remuneration later.

There is more time at the beginning of a medical career for the special study which is a requisite preliminary to special practice. The study of literature must be supplemented by special training or at least by careful personal observation of the work of those who are trained. On the other hand, if it takes ten years of actual work to make a physician a competent practitioner of general medicine, it will take less time to make him equally or more competent in one of its branches. He eats, sleeps, feels and senses his specialty. It becomes his second nature and in part almost automatic. It is also true that if a physician takes the stand that he will treat only children, for example, the psychic effect upon the laity is sure to be an enhanced respect for his ability in that line.

The proof of this is the success of the group practice. Against it has been urged that complete examinations sometimes are prescribed without there being any real necessity for them. While the group is there in easy access to the patient, there is a constant suggestion to make use of it.

It would seem that a more simple kind of group practice could be put into effect, especially in small communities, which would give excellent results. For example, pediatrics comprises about one-third of a general practice. If three physicians were to agree to form what might be called a disassociated group without having offices together, each of them could commit himself to restrict his practice solely to one class of patients. One could take the children, another the medical diseases of adults, and the third do obstetrics and such surgery as he could equip himself for. Each of the group could do his own laboratory work or they could send it to the youngest member, or if the volume of their practice warranted it, they could engage a trained laboratory specialist. In the same way one secretary could serve the group, by a proper arrangement of office hours.

The practical result would be that the patients would receive better treatment, that the physician would be better satisfied with the quality of his work and that he would at first be as well paid as before, and later even better paid, since the world is always ready to put a premium on extra good work.

In time, each of the group could associate with him a newly graduated physician to help him in his special practice. This would give him opportunity to make frequent visits to larger medical centers for broader contacts. In this way, all over the country there would be developed a large number of physicians who were well trained in special branches and not indifferently trained in all.

There is another large group of general practitioners of some years standing who desire to limit their work to pediatrics. They already have had much practical experience, but in all probability have been forced to sacrifice thoroughness to speed, in attempting to get through the day's work.

To these physicians no better advice can be given than to take one of the postgraduate courses which are being offered all over the country. Intensive all-day study devoted to pediatrics for a period of several months will pay handsome dividends on the effort and money expended.

Finally, I would call your attention to the fact that the curriculum of the modern medical school is so overcrowded that the chief problem in medical education at the present time is to determine what reductions can be made in the assignment of hours to different subjects without defeating the object of a general medical education.

If, on the other hand, the increase in medical knowledge is as great within the next twenty-five years as it has been in the past, it would be a physical impossibility to cover the subjects within a four year period. It is not too much to predict, therefore, that a system of major electives may be the final solution.

The applicants for the medical courses of today are much better trained than those of two or three decades ago. It should not be difficult for a medical student, after two years of basic training, to make the permanent decision as to which type of practice he desires. Some of the medical schools should be able to supply at least two major elective courses, one in pediatrics, and one in internal medicine. Each of these could be taught on the clinical side as a separate entity. Many physicians in the present day, practice these branches as their specialties immediately after leaving their hospital internship and make an unqualified success without any attempt to engage in general practice. This proves conclusively that these specialties can be taught individually without wasting a vast amount of time in considering the special features of each.

Certain practical difficulties with regard to degrees are quite obvious but not necessarily insurmountable. If a postgraduate degree of Doctor of Medical Science in Pediatrics is granted at the present time, and its recipient limits himself or herself to pediatric practice, it is not hard to conceive that state boards might come to admit, for special practice only, a degree of Doctor of Medicine in Pediatrics.

Life is short and judgment difficult. Some of the time now spent in training for a general practice is sheer waste for many of the students since it has no practical applicability, nor has it the advantage claimed for a baccalaureate degree that it favors mental development. If the undergraduate could have his clinical training definitely directed either to pediatrics or to adult medicine and this could be supplemented by his hospital year in the same branch, there would be a surprising difference in the value of such a physician to the community.

1828 Pine Street.

DISCUSSION

Dr. J. L. Foster (Blawnox, Pa.): I was particularly interested in this address, but wish it might have been given about twelve or thirteen years ago. I have been in general practice for ten years, and all that time have thought particularly about pediatrics and believed I should like to do that sort of work. But I felt, when I left college, that I was not fitted to do it and I had to go into general practice because I needed the money.

I am sure if our medical colleges would make some provisions along the lines Dr. Gittings has mentioned, giving some elective courses to help a student choose something that he thinks he would like to do, instead of compelling him to take the same course no matter what he expects to do or wants to do when he gets out, it would be a wonderful step in the advancement of the medical profession.

Dr. William N. Bradley (Philadelphia, Pa.): I am very glad to have an opportunity to discuss this paper, in order to say one thing. First, I think it is a very timely paper. The point I wish to stress most particularly is that I believe pediatrics is the weakest link in the chain of the medical college to-day. I do not think that pediatrics gets a square deal at our medical colleges. This is the appeal I would make, Mr. Chairman: that in some way we use our influence to require our medical colleges to give the students a better course in pediatrics.

DR. HOWARD C. CARPENTER (Philadelphia, Pa.): I do not know the impression which your address might make on a man who is in a community where facilities were such that he did not have available a well equipped hospital; but it does seem to me that that man has a very definite approach to pediatrics if he will but adopt it, and that is through the utilization of the facilities which are available in a very large number of communities throughout this state—through interest in child hygiene work. I myself believe that there is no way of entering the specialty of pediatrics as adequately as through child hygiene. Too many men begin with the sick child, which is the wrong introduction. If the man will avail himself of the facilities for doing child hygiene work (and in every vicinity, every community, there are such opportunities) he can in a very short time perfect himself in the fundamentals. What he needs is a thorough and careful study of the normal child.

DR. GITTINGS (in closing): I think Dr. Carpenter's remarks are perfectly true. Apparently the opportunity to do social work among children often occurs in communities long before hospitals are considered. And if work in the health center is to be followed by work which will instruct him in the cure of the diseased child, there is no reason why he should not practice a very capable form of pediatrics even without the advantage of a hospital. I do feel, however, that whereas interest in the child and knowledge of the normal child can be stimulated by this health center work, at the same time the actual experience with diseases is essential before the physician can be as helpful to the community as he should be.

ORIGINAL ARTICLES

THE CONTRA-INDICATIONS TO CHOLECYSTECTOMY*

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In order to be sure that I was practicing what I propose to preach, I have gone over the records of my last 200 operations for gall-bladder trouble, with the following results: There were *93 cholecystostomies and 107 cholecystectomies.* In the second or latter half of this series there were but *37 cholecystostomies and 63 cholecystectomies.*

I present these figures because I should not like to give the impression that I think drainage is generally preferable to removal of the gall-bladder. On the contrary I do not think it is, but I am convinced that so much has been said and written on the greater merits of cholecystectomy that one might suppose that the gall-bladder should be removed whenever it contained stones or was the site of an infection, or even when it was normal and its removal could be safely done—in other words, that the same principles should hold good here as in disease of the appendix. I strongly object to any such dictum and still believe that in many cases of gall-stones and infection, and in nearly all cases of apparently normal gall-bladder, cholecystectomy is contra-indicated.

In determining this question a factor enters in which it is difficult to estimate. I mean the skill and experience of the surgeon. Who would not prefer drainage to removal at the hands of one not constantly engaged in this type of work? And why? Because cholecystectomy is a more serious operation and requires more skill in its performance than simple drainage, and because it ought never to be done unless the operator is sure that there is no obstruction in the common duct—a thing not always easy to determine. I realize that the published mortality rate is higher in cholecystostomy than in cholecystectomy, but this is only apparent, because the former is the operation which any wise surgeon does in his very ill cases and in those who are bad surgical risks. Aside from the mortality we must consider the difficulties and accidents incident to cholecystectomy in certain cases and in certain hands. I refer to injuries of the common duct and liver and to hemorrhage. The skilled and experienced surgeon knows what he can and cannot do, but the unskilled and inexperienced man often feels impelled to attempt the inexpedient or the impossible.

Although the more radical operation is the one of choice in most instances, it is timely, I think, to give a little thought to the type of case in which it should not be done.

In the first place let us consider the case of the apparently normal gall-bladder. Some distinguished military man once said that "the only good Indian is a dead Indian," and I know that there are those who look upon every gall-bladder which is exposed and readily accessible as a diseased gall-bladder. Such an attitude seems to me to indicate a lack of judgment and an admission of ignorance. William J. Mayo used to say that the removal of the appendix or the fixation of floating kidneys did not cure duodenal ulcer, gall-stones, renal colic or neurasthenia, and I think it is well to consider that the removal of the gall-bladder will be no more efficacious in these conditions with, of course, the exception of gall-stones.

It has not been many years since the operation of gastro-enterostomy was done by many surgeons because the patient "had symptoms" of duodenal or gastric ulcer and in spite of the fact that no ulcer could be demonstrated. It was said that there were ulcers which could not be demonstrated and that one could not be sure that a stomach was normal by any method of examination. I should like to ask what conscientious surgeon to-day does an operation on the stomach for ulcer unless he finds the ulcer. I mention these things because I think we are in a fair way to commit the same type of error in gall-bladder surgery.

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*Read before the Section on Surgery, of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 2, 1923.

When we operate because a patient has gall-bladder symptoms and find an apparently normal gall-bladder, the first thing to do is to look elsewhere for the cause of the trouble, to examine the appendix, the stomach, the duodenum, the pancreas and the kidneys, and not simply to remove the gall-bladder. If the search is futile, what then should be done? The gall-bladder should be opened and carefully examined for stones and evidences of infection. External evidence of infection, such as adhesions, thickening and enlarged lymph nodes, should be eliminated before opening the gall-bladder. If all these are absent, the gall-bladder should be drained or the abdomen closed. The term "strawberry gall-bladder" has been applied very loosely. It represents a perfectly typical pathological condition, the mucous membrane being thickened, corrugated and covered with fine yellow granules. In the absence of these conditions it is a great mistake to apply the term and make it an excuse for cholecystectomy. I am not ashamed to say that in many of the negative cases I have done nothing. It seems to me that the surgeon must have the courage (and it takes courage) to do nothing in the absence of indications. We surgeons should realize that the internists and gastro-enterologists are constantly treating patients where apparently normal gall-bladders have been removed.

I am in no position to discuss the physiological value of the gall-bladder, but I never hesitate to leave a patient his gall-bladder if I believe it to be normal. In this connection I should like to repeat a quotation from McMaster and Rous which F. W. Parham used in a recent editorial on "Conservation of the Gall-bladder" (*Surg., Gyn. & Obs.*, Vol. 34, 1922): "The fact that few ills follow upon removal of the normal gall-bladder means merely that the body has adapted itself to the loss, not that the loss is unimportant. In this connection the surgeon would do well to remember that uncertainty as to function and confidence in readjustment are at best questionable motives for adventures in ablation."

The chronically inflamed, thickened and adherent gall-bladder should be removed and not drained. Enlargement of the lymph nodes along the common duct may be taken as a pretty safe indication of infection of the gall-bladder, and here again cholecystectomy is better than drainage.

Let us next consider the acute infections, with or without stones. I believe cholecystectomy should not be done in the majority of cases of acute infection with jaundice. In these cases it is often difficult to determine definitely that the common and hepatic ducts do not contain stones or that we have removed all of them, and without this knowledge, drainage of the gall-bladder, as well as the common duct, is better than removal of the gall-bladder and drainage of the duct. It is this latter procedure which has produced most of the instances of persistent biliary fistula from the common duct. In the presence of an acute inflammation in and about the ducts, exploration to determine patulency is dangerous and unsatisfactory. Drainage is far safer, even if a second operation becomes necessary later. In certain cases it is well deliberately to divide the operation into two stages. Such a procedure results in the saving of lives which the complete operation would certainly destroy. Crile, in a recent discussion of this subject (*Annals of Surgery*, August, 1923) wisely says: "Nevertheless in a certain group of cases, cholecystostomy bears a lesser mortality. Therefore, in patients with high blood-pressure and interstitial nephritis, in the aged and in obese patients, and in severely jaundiced patients, the lesser operation is performed."

In most cases where the acute symptoms of infection are absent, but where stones are found in the common duct, or in the common and hepatic ducts, or where sand or mud are found in the common duct, I think the gall-bladder, or at least its terminal portion, should be preserved and drainage established through it, as well as from the common duct. It is this type of case that it is most difficult to cure by any form of operation or postoperative treatment, and in which a recurrence of symptoms after apparent cure is most apt to occur. If a second operation becomes necessary in these cases I believe the patient is better with a gall-bladder than without one.

Although cholecystectomy may be the best operation in the majority of cases of chronic pancreatitis, the reverse is true in acute pancreatitis and, if the acute condition is accompanied by jaundice, cholecystectomy is contra-indicated.

I have said little about the indications for cholecystectomy, but this does not mean that they are not recognized and just as important as the contra-indications. They have not been mentioned because they are not the subject under discussion and because they have so generally and constantly been put forward in recent years.

Conclusion: Lest what I have said should be misunderstood, I should like to add, in conclusion, that I believe the removal of the gall-bladder is preferable to drainage in the great majority of cases. But there will always remain conditions and circumstances which will render the simpler procedure the wiser and safer, and we must not, in our enthusiasm for the radical operation, lose sight of this fact. Nor must we, like mere automatons, take out a gall-bladder simply because we opened the abdomen with this intention. Many of these cases call for the exercise of the wisest judgment, based on a thorough knowledge of pathologic processes and their manifestations, before one decides in favor of either of these two procedures. The decision must be made in each case based on the findings, the patient's condition, the risks and difficulties of the performance and on the skill and experience of the operator.

Although the field for cholecystectomy has become much larger, let us not fail to recognize that there is still a field for simple drainage. To do either of these operations when the other is indicated is a mistake, but I think the more serious mistake is to do a cholecystectomy in the presence of contra-indications.

RECURRENT CHOLELITHIASIS*

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A review of the end results of surgery of the biliary tract shows that symptoms return and lead to a secondary operation in approximately 8% of cases. The most frequent causes of this secondary morbidity are cholecystitis, adhesions and calculi. Calculi are found in about 50% of the secondary cases. They fall into one of two categories: 1. Those that have been overlooked at the previous operation. 2. Those that have been formed anew. Many surgeons, including Riedel, Kehr and Courvoisier twenty years ago, and Woolsey, Stanton and Buchanan more recently, have considered true recurrences of calculi to be an exceedingly rare happening. Several, in a relatively large experience, have never met authentic re-formations. The published statistics, as recorded in Table I, show that a true recurrence may be expected in about one per cent of all cases of cholelithiasis; and that as a group, they will form about seven per cent of all cases requiring secondary operation on the biliary tract.

In 1915 Stanton[7] had collected all recurrences up to that date. Since then other cases have been reported as indicated in Table II. Only those that have seemed to be authentic re-formations have been included as true recurrences. Those not clearly defined, either because in all probability the calculi had been overlooked at the primary operation, or because the printed reports of them have been too incomplete to allow the reviewer to pass accurate judgment, have been classified as doubtful. Perhaps some of these "doubtful" cases belong properly in the true recurrence class. At best, the criteria for forming judgments as to the re-formation of stones are not so certain as to be infallible. In any given case, part of the decision must be made by the surgeon who first operated. He alone will be able to say that his work was so thorough that no stones were left behind in the liver, gall-bladder or ducts, or that the pathology present was of such character that recurrence of stones would or would not be likely. That it is an easy matter to overlook stones in the ducts, and especially the retroperitoneal part of the common duct, is well appreciated, particularly if one depends upon palpation through the walls of the ducts. Eisendrath[16] has found that 32% of common duct stones can be missed in this way; Kehr[2] estimates 46%. If a long interval of well-being and freedom from recurrence of symptoms is observed, it is a presumption that the relapse is due to new calculi, and yet we know that old calculi are often silent for long periods.

Several surgeons have said that one can decide the question of recurrence on the gross character of the stones. Certainly the white, faceted cholesterin calculi bespeak a longer period of formation than others, so that if they are found at a secondary operation in the ducts the presumption is in favor of their being overlooked stones. On the other hand, the brown soft granular bilirubin-calcium sand and crumbly stones are duct born and apt to be quickly grown. One may feel quite certain in labeling them re-formed stones if they are found at the second operation. Deaver has gone so far as to say that one can predict recurrences if biliary sand has been found in the ducts. The decision as to whether a stone is new or old involves, then, the factors of previous workmanship, duration of symptoms and character of the stones.

My own experience is limited to one case of undoubted recurrence.

Case Report

Male, aged 63, carpenter, widower. Family history negative. Heavy whiskey drinker for 25 years. None for four years. Heavy user of tobacco. Morphine in small amount for 43 years.

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*Read before the Section on Surgery, of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 2, 1923.

Past History: Small-pox at age of 13; yellow fever at 38; subject to winter cough for several years. At age of 40 had attacks diagnosed as lead colic over two years' time. Had to give up painting as occupation. In 1918 hernia operation.

Present History: Onset January, 1921, with severe attack of abdominal pain following a chill associated with vomiting for four days. Admitted to one of the Pittsburgh Hospitals where cholecystectomy and repair of recurrent right inguinal hernia were done. Gall-bladder was markedly enlarged, thickened and acutely inflamed. Ducts probed; no calculi found; cystic duct obstructed; common, not dilated. Pancreas normal. Pathological diagnosis was acute and chronic purulent cholecystitis.

Patient was perfectly well for two months, then had recurrence of pain in upper abdomen. Had teeth extracted. Attacks continued until December, 1921, at frequent intervals; then there was a free period for two months. In March, 1922, was admitted to the Presbyterian Hospital on the medical service of Dr. C. W. Morton, in the midst of a typical attack which began the night before with severe pain in the right epigastrium radiating through to the right shoulder blade. He had a chill, vomited several times, was jaundiced the next morning.

Examination: Man of 63, 5 ft. 11½ inches, weighing 148. (Had weighed 195 three years ago.) Was thin but not emaciated. Slightly jaundiced. Temperature 101°, pulse 80, respirations 28. Abdomen extremely tender and rigid over upper right quadrant. Liver enlarged to two finger's breadth below costal margin. Small hernia present at outer angle of old Kocher incision. W. B. C. 8,600; poly. 86%; small monos. 10%; large monos. 4%; R. B. C. 4,000,000; hemoglobin 80%. Urine normal except for trace of bile. Wassermann negative. Tests for pancreatic insufficiency negative.

This attack subsided in three days, to be followed by another three days later with pain so severe so as to require morphin. Diagnosis was made of common duct stone, the patient being referred to author's surgical service for operation. Operation April 6, 1922. Novocaine—gas—ether anesthesia. Old Kocher incision reopened.

Findings: Dense adhesions of liver to anterior abdominal wall, and of great omentum and duodenum to inferior surface of the liver. Common duct dilated to 2½ c.m. in diameter. Hepatic duct 1½ c.m. Common duct contained nine faceted stones, the largest 2x3 c.m., itself rounded and lodged in the ampulla of Vater. Bile in common duct yellow and slightly turbid. B. Coli communis found on culture. Pancreas normal. Choledochotomy was performed and the stones removed. The largest one was dislodged only after the duodenum had been reflected forward.

Postoperative: Drained 16 to 18 ounces of bile through tube in common duct for ten days, when tube came out. Drainage through incision for ten days longer. Left hospital in six weeks feeling perfectly well. Remained so until November, then had recurrence of old symptoms of pain and slight jaundice. Readmitted to Presbyterian Hospital. Temperature 99.3°, pulse 88, respirations 20. W. B. C. 25,000; polys. 90%; R. B. C. 3,800,000; hemoglobin 75%. Patient recovered from pain quickly, but jaundice lasted 10 days. Left hospital in month feeling well. Diagnosis was recurrent cholelithiasis with probability of beginning malignancy which further observation in the dispensary was to determine. January 26, 1923, very severe typical attack. Readmitted to the hospital. Temp. 99.3°, pulse 82, respirations 24. W. B. C. 34,200; polys. 94%; R. B. C. 3,800,000; hemoglobin 78%.

Examination: Marked jaundice; marked tenderness in right upper quadrant, no rigidity; liver enlarged two inches below costal margin. When acute attack had subsided, the patient improved by rest in bed.

Operation February 19th under ether anesthesia.

Findings: Omentum adherent to anterior abdominal wall and liver edge; duodenum adherent to inferior surface of liver. Common duct dilated to size of index finger. Contained three stones the size of small hickory nuts, brown, round, soft, crumbly, in its retro-duodenal portion. Bile, dark brown, mucoid; culture showed mixed infection with B. coli communis predominating; pancreas normal. No obstruction at ampulla of Vater.

Recovery: Uneventful except for a condition of extreme asthenia for 10 days. Drainage of bile through tube; average 16 ounces a day for 23 days. Drained through incision one week longer. Two weeks after operation, injections of B. coli communis vaccine begun and continued until August 1, 1923, when patient left the city for Texas. He was at work all summer at a gasoline filling station and felt better than at any time since his first attack in 1921.

Comment: It is possible that some of the stones, if not all, which were found in the ducts at the second operation had been in the ducts at the time of the primary cholecystectomy, in view of the short interval (two months) between operation and return of symptoms. The soft stones found in the common duct at the third operation were typical recurrent stones in appearance. The author can vouch for the thoroughness of his examination and technique at the second operation, making it practically certain that no stones or debris remained in the common or main hepatic ducts. Undoubtedly then, this is a case of true re-formation of gallstones.

A review of the case histories of recurrent cholelithiasis shows that stones have been found in the gall-bladder, cystic duct, common duct, hepatic ducts or liver, as small as millet seeds, and as large as a pigeon egg, in numbers from a single stone to eleven hundred. From a clinical standpoint the symptoms return in a variable time after an operation, in as short a time as two months, or as long a period as thirteen years. The symptoms in general are the same as those experienced in the primary illness. Attacks of upper abdominal right sided pain, with or without gastric upset, with or without fever; with or without jaundice. The symptoms depend to a certain degree upon whether the gall-bladder is still in place to house the stones or to add the picture of cholécystitis. In the event of a previous cholecystectomy, the common duct syndrome is usual. At times the symptoms of calculi are not clearly defined, and one is led to believe that carcinoma of the ducts or pancreas is present. This is true, especially if jaundice is associated with severe anemia and loss of weight. Unless it be with reference to malignancy it is not essential in these recurrent biliary cases to arrive at an exact pathological diagnosis before operation, since the clinical symptoms are usually severe enough to justify and demand operative intervention no matter what the etiology, and this can only surely be determined by the eye and finger of the surgeon intra-abdominally.

The prognosis in recurrent cases from the standpoint of ultimate relief is favorable. Records show that most cases recover and stay well after the second operation. There is a group, however, who have needed multiple operations. Judd,[9] Balfour[35] and Brewer[31] have all reported cases requiring three operations before eventual recovery. There are occasional cases from whom infection cannot be eradicated by treatment, and who will die from the persistent infection or intercurrent disease or operative procedure.

The operative mortality is higher than that of primary cases, between two and three times as high, and keeps pace with the mortality rate of secondary operations for other causes. In the series of Judd,[9] the primary operative mortality was 1.5 per cent; the secondary 5.5 per cent. In any event, recurrence of gall-stones adds such a definite menace to the individual's health and life and so increases the surgical risk, that it is wise to enquire if any means may be undertaken to prevent their re-formation.

Apparently the same factors are at work as in primary cholelithiasis, with this difference; that infection is constantly present, whereas a certain number of primary calculi are formed aseptically and are not associated with any inflammatory process. The cholecystitis or cholangitis or hepatitis, in recurrent cases, is often a residue from the primary illness, but at times undoubtedly is either a reinfection, or of entirely new origin through one of the well-established portals of entry—the lymphatics, blood stream or bile ducts. Bacteria, when thus introduced into the biliary tract, are responsible for formation of calculi in several ways:

1. They reduce the normal alkalinity of the bile, producing in turn an oversaturation and precipitation of bile salts forming bilirubin calcium combinations. 2. They split up the bile salts to form fatty acids which tend to precipitate cholesterin from solution in amorphous form. 3. They cause an inflammation of the gall-bladder and ducts, which produces large amounts of mucin. This favors bilirubin calcium formation. In addition, there is an excessive desquamation of dead, degenerated epithelium which has a high cholesterin content. Murphy considered that this furnishing of soft cholesterin masses, as a sequel to inflammation, was the chief rôle of bacteria in the formation of stones.

The second factor is that of biliary stasis, which is responsible for incomplete evacuation of bile from the tract, and more readily allows precipitation and inspissation of the bile. Stagnation of the bile may be the result of impaired motor function as in the case of an inflamed gall-bladder, or secondary old dilatation of the ducts, in turn the result of previous inflammation and obstruction or lastly, mechanical obstruction, whether due to stricture or adhesions about the ducts, or a complicating pancreatitis or malignancy.

Recently there has been emphasis placed upon hyper-cholesterinemia as the cause of gall-stones. The cholesterin diathesis was originally advanced by Aschoff.[46] Lately Rothschild and Wilensky[36] have reported, as a result of their studies at Mt. Sinai Hospital, that the cholesterin factor cannot be disregarded. Other observers, however, e. g., Whipple[37] and Reimann and Magoun,[41] have found that cholesterin values have no uniform relation to disease, and that they are especially inconstant in cholelithiasis.

It would seem that the amount of bile salts secreted by the liver, as suggested first by Mayo-Robson, and quite recently called attention to by Oliver,[42] is a more important factor than the amount of cholesterin. Bile salts (sodium salts of glyco- and taurocholic acids) are formed by the activity of hepatic epithelium, and are the chief element concerned in holding cholesterin in solution in the bile. If as a result of biliary stasis or infection, hepatitis and hepatic insufficiency are set up, bile salts as a result are not excreted into the bile in normal amounts. If this condition obtains for a considerable period of time, cholesterin is no longer held in solution, but tends to settle out around a nidus dragging down amounts of mucin, pigment and calcium in varying proportions. These concretions lead to further stasis and stone formation.

A further interest in etiology has to do with the gall-bladder itself, since in primary cholelithiasis the gall-bladder is the usual site of stone formation. Theoretically, the removal of the gall-bladder ought to reduce the likelihood of recurrence to a minimum. Actually the number of recurrences is reduced 50 per cent, i. e., in the series of reported cases, there are only half as many recurrences after primary cholecystectomy as after primary cholecystostomy.

When the gall-bladder has simply been drained at the primary operation, the locus of recurrent stones is in the gall-bladder in 90 per cent of the cases. In the other 10 per cent, they are in the bile ducts and many of these may have migrated from an original site in the gall-bladder. On the basis of statistics, then, the presence of a gall-bladder is a very decided factor in the recurrence of stones.

That this should be so is not surprising in view of the structure of the gall-bladder wall with its deep crypts of Luschka ready to harbor tiny calcareous particles and infection. Again the tremendous concentrating activity of the gall-bladder cannot but be a potent factor. Whipple[37] has shown that the gall-bladder reduces the bulk of fluid 10.8 times in 22 hours. Most important of all are inflammatory products constantly produced by deep-seated infection in the wall, which drainage has not affected. Both Rosenow[38] and Reimann[39] have shown that streptococci may live in the gall-bladder wall indefinitely.

The liver, too, may be responsible for recurrent stones, or more truly overlooked stones, by harboring fine calculi in the intra-hepatic ducts. These escape observation at the primary operation, and later descend to become larger gall-bladder or common duct stones. Hawkes[40] reported a case in which two years after a cholecystectomy there was a return of symptoms, and twelve stones were dug out of the liver substance.

The crux of etiology is infection. Moynihan's oft quoted and pointed phrase, "Every gall-stone is a tombstone erected to the evil memory of a germ that lies dead within it," would seem to be more true of recurrent than of primary stones. One might almost definitely say that if infection in the biliary tract could be prevented or cured, there would be no recurrent stones. The treatment, then, for the most part is to be directed against infection, and infection not only of the biliary tract, but of the pancreas and appendix as well. These organs quite as often assume the rôle of progenitors as that of victims of biliary tract infection.

Combative and prophylactic measures to be undertaken should include the following: 1. Early operation in biliary tract disease. It is chronicity of infection that is hard to eradicate, whether it is in the liver, ducts or gall-bladder. 2. Thorough exploration and thorough removal of calculi at the primary operation. Finger palpation within the opened ducts should be done where technically feasible. Lavage of the ducts, as suggested by Brewer, or suction as recommended by Judd to remove sandy debris and small calculi, may be of service. One must be extremely careful not to force small calculi into the intrahepatic ducts where they cannot be reached or dislodged. 3. Cholecystectomy rather than cholecystostomy as the operation of choice, because the gall-bladder, as already shown, is so definitely responsible for re-formation of stones. 4. Close amputation of the cystic duct to prevent later dilatation into a false gall-bladder, in which a stone might form. 5. Prolonged biliary drainage. This is the most logical and effectual way to care for infection of the ducts and liver. 6. Removal of the appendix, if still in place, since the appendix is in some cases the father of the biliary infection. 7. The administration of mixed vaccine containing B. coli communis, staphylococcus and streptococcus. This is a measure I am carrying out now in those of my gall-bladder cases which have a history of long infection, or a very severe one. I am frank to admit that I am not very optimistic about the benefits to be derived, but I believe in the ra-

TABLE NO. 1.

Name and year of report		*Total No. of cases Biliary Tract Disease*	*Total No. cases requiring reoperation*	*Total No. of secondary cases with calculi*	*Per cent with calculi*	*Recurrent calculi*	*Per cent of truly recurrent calculi*
McWilliams[1]	1906	69	...	10	14.5	1	1.4
Kehr[2]	1911	1780	...	2	0.3	3	0.2
Ochsner, Stanton [3]........	1911	245	...	6	2.0	3	1.0
Whittemore[4]	1913	595	...	30	17.0	0	0
Blaxland[5]	1914	100	...	...	...	0	..
Buchanan[6]	1915	300	...	10	3.0	0	..
Stanton[7]	1915	1173	...	10	1.2	2	0.2
Deaver[8]	1916	1089	42	22	4.	3	0.3
Judd[9]	1918	2027	219	119	8.6	20	1.0
Smithies[10]	1920	1000	...	21	2.1	1	0.1
McGuire[11]	1920	250	...	3	1.2	1	0.4
Jacobson[12]	1920	397	30	20	5.0	0	0
Deaver[13]	1920	800	70	26	3.3	2	2.0
Barling[14]	1921	100	...	2	2.0	2	2.0
Woolsey[15]	1921	60	...	5	12.5	1	1.6
Decker	1923	65	3	1	33.0	1	1.5

TABLE II.

A—Recurrent Gall-Stones in Gall-Bladder

Reported	*By*	*Year*	*Sex*	*Age*	*Primary Operation*	*Findings*	*Interval*	*Secondary Operation*	*Findings*
1. Korte	16	1905	..	..	Cystostomy	Perforating empyema G. B. 2 large stones	1 year	Cystostomy	1,121 Small Stones
2. Moore	17	1905	F.	43	Cystostomy	Large number of stones	8 months	Cystectomy	G. B. thick, adherent, myriads soft yellow stones
3. McWilliams	1	1906	F.	56	Cystostomy	Atrophied G. B. 4 Stones	3½ years	Cystostomy	Numerous stones; G. B. shrunken adherent
4. Westbrook	18	1911	F.	35	Cystostomy	Acute cholecystitis—6 faceted stones ½ in. diameter.	1 year	Cystectomy	Thickened G. B.—8 faceted stones size peas
5. Murphy	19	1914	..	..	Cystostomy	2 stones	3 years	Cystectomy	4 stones perforating through
6. Stanton	7	1915	F.	35	Cystostomy	No. of large stones	5 years	Cystectomy	2 medium sized; no small stones; cholecystitis, chronic.
7. Finney	20	1916	F.	Old	Cystostomy	Marked cholecystitis with stones	10 months	Cystectomy	G. B. again filled with stones
8. Syme	21	1916	F.	31	Cystostomy Choledochotomy	72 stones in G. B. 18 in Hepatic Common Ducts	5 years	Choledochotomy Cystostomy	Soft friable stones in C. D. 2 hard ones in G. B.
9. Vaughn	22	1916	M.	Young	Cystostomy	Stones in common duct and G. B.	1 year	Cystectomy	20 stones in G. B.
10. Eisendrath	23	1917	..	..	Cystostomy	2 oval stones	9 years	Cystectomy	Sandy detritus
11. Rankin	24	1918	..	..	Cystostomy	Cholecystitis with stones	9 years	Cystectomy	G. B. filled with stones
12. Judd	9	1918	M.	45	Cystostomy	Bile, sand and large stone	3½ years	Cystectomy	Cholecystitis; one stone
13. Judd	..	1918	M.	38	Cystostomy	Many stones in G. B.	1 year	Cystectomy	Cholecystitis; one stone
14. Judd	..	1918	F.	41	Cystostomy	Many stones in G. B.	7 years	Cystectomy	Cholecystitis; stones.
15. Judd	..	1918	F.	25	Cystostomy	Many stones in G. B.	7½ years	Cystectomy	Cholecystitis; stones in G. B.; one in cystic duct; dilatation of C. D.
16. Judd	..	1918	F.	30	Cystostomy	Stones in G. B.	5 years	Cystectomy	Large G. B. filled with stones; pancreatitis.
17. Judd	..	1918	F.	31	Cystostomy	Stones in G. B.	2 years	Cystectomy	Stones in a tuberculous G. B.
18. Judd	..	1918	F.	57	Cystostomy	Many stones in G. B.	3 years	Cystectomy	Stones in G. B. and Cystic Duct.
19. Judd	..	1918	F.	28	Cystostomy	Stones in G. B.	7 years	Cystectomy	Stones in strawberry G. B.
20. Judd	..	1918	F.	33	Cystostomy	One stone in G. B.	3 months	Cystectomy	Cholecystitis with many stones
21. Judd	..	1918	F.	38	Cystostomy	Small mulberry stones Strawberry G. B. Pancreas; large, hard	3 years	Cystectomy	Empyema G. B. with stones; many adhesions
22. Judd	..	1918	F.	30	Cystostomy	Stones in G. B.	8 months	Cystectomy	One cholesterin stone
23. Judd	..	1918	M.	48	Cystostomy	Acute cholecystitis—many stones in G. B.	1½ years	Cystectomy	One Mulberry stone.
24. Judd	..	1918	F.	41	Cystostomy	Cholecystitis, many stones in G. B.	5 years	Cystectomy	Cholecystitis and stones in G. B.
25. Judd	..	1918	F.	62	Cystostomy	Ruptured G. B. and stones—C. D. thickened and dilated	6 months	Cystectomy Choledochotomy	Stony debris in G. B.; C. D. thick walled and dilated, subacute pancreatitis.
26. Smithies	10	1918	..	..	Cystostomy	100 small-sized stones	3 months	Cystectomy	G. B. full of stones
27. Woolsey	15	1921	F.	..	Cystostomy	Stones in G. B.	7 years	Cystectomy	7 stones in G. B.
28. Gibbon	25	1921	..	..	Cystostomy	70 stones in G. B.	3 years	Cystectomy	25 soft mulberry stones in G. B.
29. Foss	26	1921	..	..	1—Cystostomy	Stones in G. B.		2—Cystostomy 3—Cystostomy 4—Cystectomy	Four stones in G. B. Four stones in G. B. 500 millet seed stones in G. B.
30. Stanton	7	1915	Nine collected cases; recurrence due to presence of silk sutures or other foreign body in G. B.						

B—Recurrent Gall-Stones in Ducts

Reported	*By*	*Year*	*Sex*	*Age*	*Primary Operation*	*Findings*	*Interval*	*Secondary Operation*	*Findings*
1. Korte	16	1905	..	..	Choledochotomy	Stones in C. D. and Hepatic Duct	1½ years	Choledochotomy	Stone in C. D. Free G. B.
2. Korte	16	1905	..	..	Cystostomy	7 Stones in G. B., 1 stone in Cystic Duct	7 years	Exploratory	Carcinoma stomach; walnut stone in C. D.; ducts greatly dilated
3-5. Mayo	27	1908	3 cases	..	Cystectomy	No details			
6-7. Flörcken	28	1908	2 cases—Korte		....	No details			
8. Eisendrath	23	1917	..	..	Cystectomy	Small, hard G. B. with stones	2 years	Choledochotomy	Millet seed in cystic duct stump
9. Eisendrath	23	1917	..	..	Cystectomy	Stones in G. B.	3 years	Choledochotomy	2 bean-sized stones in C. D.
10. Haynes	29	1918	M.	40	1—Cystectomy 1916 2—Choledochotomy 1917	C. D. stone ½ x 1 in.	6 months	Choledochotomy	2 soft C. D. stones
11. Hotchkiss	30	1918	..	..	Cholecystectomy	2 stones with sandy material	1 year	Choledochotomy	1 large stone in C. D.

Reported	*By*	*Year*	*Sex*	*Age*	*Primary Operation*	*Findings*	*Interval*	*Secondary Operation*	*Findings*
12. Kadian (Quoted by Eisendrath)	23	1917	..	..	Cystectomy	Stones in G. B.	6 years	Choledochotomy	Several cholesterin stones in cystic duct stump
13. Judd	9	1918	M.	62	Cystectomy Choledochostomy	2½ in. stones in C. D.	1 year	Choledochotomy	2 stones in ampulla Vater; many small in C. D. with muddy material
14. Judd	..	1918	F.	65	Cystectomy Dr.	2 stones in C. D. Fistula between C. D. and Duodenum	2 months	Choledochotomy	Stones in hepatic duct
15. Judd	..	1918	F.	41	1—Cystectomy	Stones in C. D. and Empyema	(2) 11 months	Choledochotomy	6 small C. D.; 6 small hepatic duct
							(3) 11 months	Choledochotomy	Many stones in ampulla—C. D. much dilated
16. Judd	..	1918	F.	59	Cystectomy Dr.	Small stones in G. B. and C. D.; thick infected G. B.	2½ years	Choledochotomy	C. D. stone size of pigeon egg
17. Judd	9	1918	M.	56	Cystectomy	G. B. large with foul bile. C. D. ½ in. diam. with soft stone and putty-like material	5 months	Choledochotomy	Soft crumbly stone ½ in. x 1 in. in C. D.
18. Judd	..	1918	F.	30	Cystostomy	Many small stones in G. B.	5 years	Cystectomy, Choledochotomy	Cholecystitis. One stone in ampulla
19. Deaver	13	1920	F.	45	Cystectomy Dr.	Stones in G. B. and C. D.	1 year	Choledochotomy	(2 recurrences); small stones in C. D. and H. D.
20. Barling	14	1921	F.	74	Cystectomy Dr.	Soft stones in G. B.	6 years	Choledochotomy	Soft stones in C. D.
21. Brewer	31	1921	F.	50	Cystectomy	Cholecystitis with stones	2 years	Choledochotomy	Stone in C. D.
22. Brewer	31	1921	F.	64	Cystectomy Dr.	Several stones in G. B.; one in C. D.	4 years	Choledochotomy	One in C. D.
23. Brewer	31	1921	F.	60	1—Cystostomy 2—Cystostomy Dr.	Stones in C. D.	2 years	3—Cystectomy	Biliary Sinus, abscess
							8 months	4—Choledochotomy	Several stones in C. D.
							8 months	5—Choledochotomy	Seven stones in C. D., soft, brown
							18 months	6—Choledochotomy	Several stones and brown fluid containing colon bacillus
24. Decker	..	1923	M.	63	1—Cystectomy	Acute Chronic purulent Cholecystitis	2 months	2—Choledochotomy	Dilated common and hepatic ducts 9 stones; largest 2x3 cm. in ampulla Vater. Colon bacillus in bile
							8 months	3—Choledochotomy	Dilated ducts; 3 stony brown round, soft, bile; dark brown mucoid contained colon bacillus

C—RECURRENT STONES—DOUBTFUL

Reported	*By*	*Year*	*Sex*	*Age*	*Primary Operation*	*Findings*	*Interval*	*Secondary Operation*	*Findings*
1. Korte	16	1905	..	..	Cystostomy	Stone in C. D. size of pigeon egg; ducts free	7 years	None	
2. Korte	..	1905	..	..	Cystostomy	Acute empyema G. B. 4 stones	6 years	None	Passed 2 stones per rectum
3. Korte	..	1905	..	..	Cystostomy	2,550 stones	11 years	None	
4. Hammersley	32	1909	F.	..	Cystostomy	3 stones in G. B.	3¼ years	Cystectomy	Stone size of cherry—Cholecystitis
5-7. Stanton	3	1911	3 cases	..	....	Details not given			
8. Robitsbek	33	1914	..	..	Cystostomy		1 year		
9. Vaughn	22	1916	F.	Middle Age	Cystostomy	3 stones in G. B.	3 months	Cystectomy	Many stones in G. B.
10. Vaughn	..	1916	M.	35	Cystostomy	3 stones in G. B.	11 months	Cystectomy	One stone in G. B.
11. McGuire	11	1917	..	..	Cystostomy		2 years	Cystectomy	200 stones in G. B.
12-13. McGuire	..	1917	2 cases	..	....	Details not given			
14. Judd	9	1918	F.	61	Par. Cystectomy	Empyema, stones in G. B. and cystic duct	3 years	Choledochotomy	2 stones in C. D. size of hazelnuts
15. Judd	..	1918	F.	38	Cystectomy	Large thick walled G. B. 1 stone pus; 1 stone cystic duct	2½ years	Choledochotomy	1 stone; ½x¼ in. in Hepatic Duct
16. Judd	..	1918	F.	65	Cystostomy April 15th	Many stones in G. B.			
					Cystectomy October 15th	G. B. large, filled with tarry bile and stony material	2 months	Choledochotomy	1 C. D. stone
17. Judd	..	1918	M.	58	Cystectomy	Many stones in G. B.; pancreatitis	Short.	Choledochotomy	1 C. D. stone
18. Judd	..	1918	F.	38	Cystectomy	Large number stones in G. B.	6 months	Choledochotomy	1 C. D. stone
19. Judd	..	1918	F.	37	Cystectomy	Cholecystitis; large number in G. B.	1 year	Choledochotomy	Small amount of calcareous material in bile
20. Judd	..	1918	F.	41	Cystostomy	Large G. B. filled with stones	1 year	Choledochotomy	Many stones in common and hepatic ducts
21. Brewer	31	1921	F.	60	Cystectomy	Stones in G. B.	9 months	Choledochotomy	Stone in hepatic duct
22. Lund	34	Mentions 3 cases; details not given.							
23. Balfour	35	Mentions 3 cases; details not given.							

tionale, particularly in those cases where positive cultures are obtained. Brewer[31] reported the use of autogenous vaccine in one recurrent case with indifferent result. 8. Dietetic measures in those patients in which a constant hypercholesterinemia can be demonstrated. Inasmuch as the cholesterin content of the blood depends upon the cholesterin content of the food, and secondly the esterization and absorption of free cholesterin is dependent upon the lipoids, both cholesterin and fats should be minimized in the diet. Such a diet excludes eggs, cream, butter, meat and fish, and makes vegetables, except beans and peas, the main stay.

A word, perhaps, should be said with reference to medicinal therapy and the so-called non-surgical biliary drainage, as advocated so enthusiastically by Lyon, Smithies,[43] and other internists. However satisfactory intraduodenal methods may be in a diagnostic way, one is justly skeptical as to their therapeutic value in relieving biliary stasis, or curing deep-seated infection of the biliary tract. The hope of cure of infection, in both early and late cases, rests with surgery. If the measures that have just been outlined are carried out, re-formation of gall-stones will be reduced to a smaller incidence, and the need of secondary operations for other reasons will be materially lessened.

Summary

1. Gall stones re-form in about 1% of cases.

2. Secondary operations are needed in 8% of biliary tract cases. At the second operation, stones are found in 50%. They are true recurrences in about 7%, and "overlooked" or "doubtful" in the balance.

3. The clinical picture of recurrent cholelithiasis resembles that of the primary disease. It depends upon the location of the stones, as well as the condition of the gall-bladder and ducts.

4. Ultimate prognosis in recurrent cases is favorable. Operative mortality is about 5%, and two to three times the mortality for primary operations.

Of etiological factors, infection and biliary stasis are the most important. Less so, are the amount of bile salts secreted by the liver and hypercholesterinemia. The presence of gall-bladder increases likelihood of recurrence 50%.

6. Treatment is surgical, and by way of prophylaxis should include painstaking technique at primary operation, cholecystectomy rather than cholecystostomy, and prolonged biliary drainage. Vaccine therapy and dietetic measures are of less value.

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DISCUSSION

OF PAPERS BY DRS. GIBBON AND DECKER

Dr. Donald Guthrie (Sayre, Pa.): I am very glad to have the opportunity of discussing these papers for I consider them exceedingly timely. I shall confine my remarks chiefly to Dr. Gibbon's paper, but in discussing Dr. Decker's paper, I quite agree with him in all the points brought out and especially in emphasizing the one that it is well in case of doubt to open the common duct and explore it directly for stone.

I am glad to see that the pendulum is swinging back a little the other way. The public as well as the profession have been fed up on the belief that in all instances the gall-bladder must be removed. Things have come to such a pass that often I am consulted by patients who ask the pertinent question: "Doctor, do you always remove the gall-bladder?" and if I say "No, in some instances I do not," the patient is very prone to be disappointed with the statement and to go into other hands. We were led some years ago by the radical surgeons to believe that the gall-bladder, when diseased, must always come out.

In 1915 I read a paper in Detroit before the American Medical Association on "The Indications for Cholecystectomy." It was based upon a questionnaire sent out to forty-five prominent American surgeons. It was not what I personally believed, but rather a consensus of opinion on the subject. I was amazed to find how extremely radical the general trend of surgery in America was in those days. For instance, in the first question, "What percentage of recurrences follows the operation of cholecystostomy?" the answer was, "average 14% of all cases." I think if the same questionnaire were sent out to-day there would be a far different set of answers because I believe the radical tendency which prevailed led many sound men to answer the question at random, taking for granted that recurrences would follow. Another question in that old paper, "What are the indications you consider for cholecystectomy?" would almost invariably bring the answer that if diseased, the gall-bladder should come out.

I am sure there is to-day a change in the consensus of opinion among these very men. The points brought out by Dr. Gibbon are excellent. In the first place there are many gall-bladders that should be left in. In the presence of acute infection, of any kind, of the gall-bladder, I think the surgeon who removes these indiscriminately will court future trouble. I have operated on some of my own patients for later trouble with common duct obstruction in which I have wished very much I had not removed the gall-bladder in that particular class of cases.

Another class of cases in which I believe conservative measures should be called for is in the acute empyema. If I had it, before being put to sleep, I should request the surgeon please to drain my gall-bladder, and not remove it during my acute illness. In that old questionnaire, even on the subject of acute empyema of the gall-bladder, the surgeons in America were extremely radical. I look upon acute empyema as a general disease of the biliary passages with a local manifestation in the gall-bladder. We tell our patients that after drainage we feel we have relieved them of one serious acute attack and they must bear with us on the question of future trouble. If they have attacks of pain they must return later in the quiescent period and have the gall-bladder taken out.

*DR. THOMAS S. CULLEN (Baltimore, Md.): Twenty years ago there was much discussion as to when to operate and when not to operate in acute appendicitis. A wide difference of opinion also existed as to what should be done when a coexistent peritonitis was present. The subject was thrashed out at medical meetings and in the literature for several years, with the result that there is now a pretty general unanimity of opinion as to just what procedures are indicated in the various stages of appendicitis.

What applied to appendix operations two decades ago holds good to some extent for gall-bladder operations to-day. In the beginning nearly all gall-bladders were drained. Later it was found that some of these patients suffered from return of their gall-bladder infection or more stones developed, necessitating a second operation, so that very naturally the question arose: "Why not remove the gall-bladder at the first operation and prevent further trouble? So firmly convinced were some surgeons that this was the proper procedure that they removed the gall-bladder in nearly every case in which they found trouble. In many clinics this has become the routine procedure; and yet in the minds of quite a few surgeons there has been a lurking suspicion that cholecystectomy might not be the wise thing in all cases, but that each case should be judged on its merits. Hence there is now a tendency on the part of many in some cases to drain and in other cases to remove the gall-bladder.

A follow-up of the cases has clearly demonstrated that a certain percentage of patients will have subsequent trouble no matter whether the gall-bladder has been drained or whether it has been removed.

Cholecystectomy on a patient who is in good condition certainly gives brilliant immediate results, and furthermore it eliminates the postoperative drainage which for a few days may be so abundant that the dressings are continually soaked, causing great discomfort.

In many of my early cases the gall-bladder was so firmly glued to surrounding structures that its removal was impossible, and in quite a number of cases where it was gangrenous I was afraid to attempt a cholecystectomy, feeling that it was unwise to dissect inflamed tissues and leave raw areas through which the infection might readily be disseminated. In such cases I limited myself to cutting away the gangrenous area and then draining. These patients, unless desperately ill at the time, promptly recovered and the majority of them remained well.

Bearing these cases in mind I contented myself with drainage of the gall-bladder instead of removal. Of course, where the gall-bladder was very large the major portion of it was cut away prior to the introduction of the tube. In no small a percentage of the cases I felt that the drainage of bile, particularly where there was thickening and induration in the region of the pancreas, was almost as important as the removal of the gall-stones. Nor could I quite get away from the feeling that it was probably unwise to remove the only switch from a single track road. This "switch" might be very valuable for anastamosis into the duodenum should the main line subsequently become blocked.

Some two or three years ago I felt it would be wise to take stock and see just what had been accomplished in our drainage cases. Dr. H. L. Darner went over my case books and found records of 296 cases. Six of these were ruled out, as a cholecystectomy had been done on account of the possibility of cancer. As will be learned from Dr. Darner's paper, which is to appear shortly in *Surgery, Gynecology and Obstetrics,* in seventeen cases the gall-bladder was gangrenous; in 104 the process was acute, in 144 relatively quiescent at the time of operation, and in 25 the condition was found when the abdomen was opened for some other lesion. Dr. Darner was indefatigable in his endeavors to trace all these gall-bladder patients, and in all but fourteen cases he was successful.

His tabulation shows that 29 patients died shortly after operation, 14 were not located, 19 were unimproved, 26 were markedly improved, but had some symptoms, while the remaining 202 had had no gall-bladder symptoms after operation and were either well or had died of some other disease, the nature of this disease being specified in nearly every case. Of the 29 immediate deaths, as shown by Dr. Darner's table, 17 were due to desperate complicating preoperative conditions. This leaves 12 cases, 4.14%, in which death was due to unlooked for postoperative complications.

Under "Patients that recovered but were not benefited by operation," Dr. Darner records 19 patients, 16 of whom I had operated upon. In the remaining three the first operation had been performed elsewhere. A perusal of this portion of the forthcoming paper will give the reader a clear idea of the cases in our series in which drainage of the gall-bladder was a failure.

As our series embraces a period of twenty-five years, we should naturally expect a number of deaths during this long interval. Thirty-four patients died from causes in no way associated with the previous gall-bladder trouble. There are living at the present time: Unimproved 16, improved 26, well 168, total 210.

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*Owing to the inability of Dr. Cullen to be present, Dr. Harold L. Foss, Secretary, read Dr. Cullen's remarks.

Dr. Darner in his article has aimed to give the exact facts so that the reader, after going through the individual protocols, may judge for himself just what has been accomplished. He has, in the main, refrained from making any deductions.

I hope that all surgeons will shortly report their end results in their gall-bladder cases. Of course, in clinics in which many acute gall-bladder infections are encountered, the immediate mortality will be infinitely greater than in those where quiescent cases supply the bulk of the operations.

In due time we shall get the proper perspective and be able to determine with some degree of accuracy when to drain and when to remove the gall-bladder.

It is perfectly clear that the subject is not yet settled. I personally am deeply interested in this question from the standpoint of the patient. In 1915 I had my own gall-bladder drained after removal of a large number of stones from my gall-bladder and cystic duct. Later on, more stones formed and my gall-bladder was excised on February 28th of this year.

If your gall-bladder had been removed and you developed signs of acute or subacute pancreatitis how you as a surgeon would long for a gall-bladder of your own, no matter how insignificant it might be.

I feel certain that the pendulum will swing more and more toward leaving in the gall-bladder wherever possible.

Dr. Moses Behrend (Philadelphia, Pa.): Dr. Gibbon's paper is full of sound judgment. There is no question about that. One of the main points he made and one of which he tried to impress upon you is the fact that everybody, that is every man who is doing surgery, is not capable of removing every diseased gall-bladder he meets. I cannot see why, with the experience Dr. Gibbon has had, he should do 33 cholecystostomies out of 100 cases. I believe that number is correct.

We have had a great deal of experience in the past with cholecystostomies and we have had sufficient time to look back upon our work. I am sure that with the operation of cholecystectomy our results have been very much better than with those for cholecystostomies, as has been stated here by Dr. Decker and others. There is no question that there is an indication for cholecystostomy in certain cases, but these cases are mighty few and far between. In the chronic jaundiced cases, undoubtedly the gall-bladder should be retained and used as a means of internal drainage, connecting this organ with other hollow viscera. In empyema of the gall-bladder I do not entirely agree with Dr. Guthrie as to the decision in this case. I believe that many empyemas of the gall-bladder can be removed by cholecystectomy and the patient is better without a diseased gall-bladder. That brings me to another point; the similarity between chronic appendicitis and chronic cholecystitis, and that a patient with chronic cholecystitis is better off wth cholecystectomy than cholecystostomy.

Dr. John J. Buchanan (Pittsburgh, Pa.): Five minutes I am sure is not long enough for any man to tell one-fifth of what he would like to tell of the story which has been so admirably expounded by the gentlemen who have already spoken.

My experience with gall-bladder and common duct disease leads back a good while. I may say that during my early experience with gall-bladders and gall-stones, the treatment I adopted was almost entirely drainage, and therefore, I think I am able to tell what is good and what is bad about drainage. The good thing about drainage is that it seems to be an easier operation and a safer operation than removal of the gall-bladder; and I believe that to be true in a general way. I think, however, that the more experience a man gets in removal of the gall-bladder, the more nearly equal his mortality becomes in these two operations. After all, those who are experienced in cholecystectomy find that their risk is almost the same; but the reason for this is that they drain many of the bad cases and, therefore, the class of cases subjected to the two operations is not exactly the same. About eight years ago I began to change my practice, and instead of draining four cases out of five I got to removing about four gall-bladders out of five. From that time till the present, the thing that has impressed me more than anything else is that, when a former patient comes into my office saying, "Doctor, you operated on me for gall-stones three, four, five or ten years ago," I expect her to give a better report of her comfort and freedom from stomach troubles and minor pains if her gall-bladder had been removed than if it had been drained. I meet her more cheerfully. If she comes back jaundiced, however, my feeling is far otherwise.

I was, unfortunately, unable to hear Dr. Gibbon's paper, but I believe from the discussion of his paper that he has struck it very right, that if the gall-bladder promises to be good, then leave it; if it does not promise to be good, take it away; but the question is, who is able to pronounce on the future of any diseased gall-bladder.

Now I want to speak a word on the origin of gall-stones as bearing on recurrence. I don't believe we know much about the cause of gall-stones. We talk of organisms as the cause. After we remove the stones and drain the gall-bladder, we still have the same organisms, but no re-formation of the stones. The canals of Luschka were supposed to be the favorite location where gall-stones form, but we are not so sure of that after all. I believe the gall-stone disease is a thing a man may have one time in his life, the same as he may have smallpox, diphtheria and scarlet fever, and that, after he has had his attack and the gall-stones form, he never gets that disease again. As in those very exceptional cases where people have had small-pox twice, gall-stones may come twice. I do not believe in this 1% of recurrence which Dr. Decker alludes to in the paper he has so admirably presented. I believe the stones were left in both the first and second operations on his patient. I have had the experience of removing stones four times from the common duct of the same patient. I do not think there is any surgeon, I bar none, who can take a large series of cases and get all the gall-stones. If experienced, he gets out all in the gall-bladder or cystic duct, but how does he know that there is not one still hiding in the hepatic duct? It may be small and, if retained, may increase in size by concentric laminae, either before or after impaction.

I think the question of whether to remove the gall-bladder in a difficult case is largely one for the operator himself. Does he feel competent to do it? If not, he had better drain. If he feels competent, he had better remove it. I still think, with Dr. Gibbon, that there is a place for cholecystostomy, but, as a man's experience grows, it becomes less and less. There comes a case, however, where no difference what his skill, he had better leave a gall-bladder. I believe, as one member has said, that one of the times one should leave a gall-bladder is when he has a jaundiced patient with stones in the common duct.

I am very glad to see that the pendulum is swinging and I think that as long as it continues to swing, we will have these helpful discussions.

DR. HERBERT B. GIBBY (Wilkes-Barre, Pa.): I think, as Dr. Buchanan has stated, every case must be considered on its own merits. There is one reason for removal of the gall-bladder that has not been stated this afternoon. Some years ago I drained a gall-bladder, removing seven or eight stones. Seven years later the patient returned with a small tumor in the scar. I was rather suspicious of it and gave him his choice between treatment with radium or an excision. He thought very carefully over it and decided on excision. I removed the gall-bladder and the pathological report showed that carcinoma had developed in the scar where my drainage tube had been placed some seven years previously. I then treated him with radium also, but the case developed a general carcinoma of the abdominal wall and liver and the patient succumbed in the course of about six months.

One of the difficulties when we do remove the gall-bladder depends, as Dr. Gibbon has said, upon the skill of the operator. In one of my early cases I had the misfortune in some way to injure the duodenum and a duodenal fistula resulted in three or four days after the operation. I remembered Dr. Mayo's dictum that duodenal fistula let alone usually meant death, so I opened my patient and closed the fistula, closed it very carefully, but it did not remain closed. It opened four days afterward. I opened my patient the second time and this time I closed the fistula with some omentum. While it was not an absolutely complete closure for the first few days, within five or six days the drainage from the duodenum ceased entirely and my patient made a good recovery.

I believe it is a question which is sometimes difficult to decide and occasionally it is the better part of valor to resort to drainage, no matter how skilful the surgeon may be, when conditions are such that the risk to life is very greatly enhanced by a cholecystectomy.

DR. JAMES H. BALDWIN (Philadelphia, Pa.): Dr. Buchanan has said that five minutes is not enough to discuss this subject and I agree with him, because one could talk all day and the next day and all the rest of the week. When men like Dr. Gibbon and Dr. Buchanan talk, it is up to the rest of us to sit up and listen. They are surgeons of wide experience and they have made deep studies and have had long experience and they know what they are talking about. Remember the title of Dr. Gibbon's paper. It was on the "Contra-indications to Cholecystectomy," and he said that most of the cases should have cholecystectomy done, but there was a certain proportion of cases that should be drained and the gall-bladder not removed. You know of cases that are deeply jaundiced, and when you do a cholecystectomy you get hemorrhage into the abdomen afterward, and you can do what you please but you will not save your patient. But if you drain the patient until jaundice has subsided, you can then do your secondary operation. Many of these cases are similar to an enlarged prostate. As someone said, it is not the bladder or the gall-bladder so much as it is the kidneys and liver that are in trouble, and if you do this preliminary drainage a great many of your cases will be saved.

There is one thing not touched on, and all who have done gall-bladder surgery have run into it at times. You may have operated on your patient and her heart began to race and race. Then you found she had a myocarditis. Or you may have suspected it before operation, but hoped you could get away with it, and your patient went on with that increasing high rate and on and on and out, and digitalis or anything else was of no avail. Myocarditis indicates only surgery that is absolutely necessary.

Dr. Decker mentioned in his preventive treatment of recurrences that infection was the cause. In his excellent paper he did not mention mouth infection and I believe it is one of the commonest causes of both the primary and secondary gall-bladder tract infections. I know of one case where an apical abscess existed. The tooth was extracted and the patient swallowed some of the pus and in a few days had an acute cholecystitis, which I am firmly convinced was due to streptococcic pus which came from this tooth.

DR. GIBBON (in closing): Dr. Baldwin has emphasized the main point in my paper, namely, that there is still a field for cholecystostomy.

I was very much interested in Dr. Decker's paper. This question of redevelopment of stones is very interesting and difficult to answer or understand. I think it is remarkable that in the large number of cases he went over there was not a higher percentage of recurrence. In the last 200 cases of my own there were only four secondary operations, showing that secondary operations are not so frequent. I only know of one case in which I can say positively there was a re-formation of stones. I have always felt when I reoperated and found stones that I overlooked a stone. I think Dr. Buchanan is right, but in one instance I know I did not overlook the stone. I operated on a physician and removed six or eight stones from the gall-bladder. He had none in his duct, and he made a good recovery; but within less than two years he returned with typical colic, and I told him I supposed I must have overlooked a stone and he submitted to another operation. I found twenty-five stones in his gall-bladder all the same size, yellow mulberry stones. This I know was a case of re-formation of stone.

As to the determination of patency of common duct I think in this country we have failed to profit by the experience of French surgeons. We have had great difficulty in removing stone from the distal end of the common duct. It is quite the custom of French surgeons to open the duodenum in these cases. I have done it a number of times and it is the most satisfactory procedure that I know of to determine that you have completely emptied the common duct. The finger is the only thing to put into the common duct to determine its patulency in acute infection.

DR. DECKER (in closing): In reviewing this series of recurrent cases, so-called, it was very difficult to be certain that the cases were those of true recurrence. I might say that my table probably included the case Dr. Gibbon has just spoken about, which I think he has previously reported.

Dr. Buchanan has been consistent; he made the same observations questioning the re-formation of gall-stones five or six years ago that he did to-day. One cannot be absolutely sure that he has removed all the stones, for as Dr. Buchanan says, a stone may be in the liver itself, forming in the minute radicles of the biliary tract. Such stones, however, ought, in the sequence of events, to discharge themselves spontaneously through the progressively larger ducts. Deaver, in one case he reported, found, several months after his primary operation, 300 or 400 stones, and he made the comment that it seemed rather incredible to have missed all of these stones several months before. He felt very certain that there was re-formation of stones in this case. I feel justified in reporting my own case as true recurrent cholelithiasis.

The matter of infection of the gall-bladder, the part that it plays in the realm of abdominal surgery, is extremely interesting, and is still in statu quo. Who can tell certainly at operation whether the gall-bladder should or should not come out; whether it has streptococci so deeply in its walls that it will be a menace subsequently? According to the findings of Reimann and Rosenow, a gall-bladder once infected will harm the individual later. Graham has studied the relation of hepatitis to gall-bladder disease very extensively. The current of infection goes that way, from the liver to the gall-bladder, rather than the other, in the lymphatics. Deaver believes that inflammation of the gall-bladder is often the residue of appendiceal or pancreatic inflammation. In any way we look at the problem, it would seem that, except in the conditions Dr. Gibbon has so ably presented, and seconded by Dr. Guthrie, as the operation of choice, the gall-bladder should be removed rather than drained.

POISONS SOLD BY GROCERS*

CHEVALIER JACKSON, M.D., Sc.D.

PHILADELPHIA, PA.

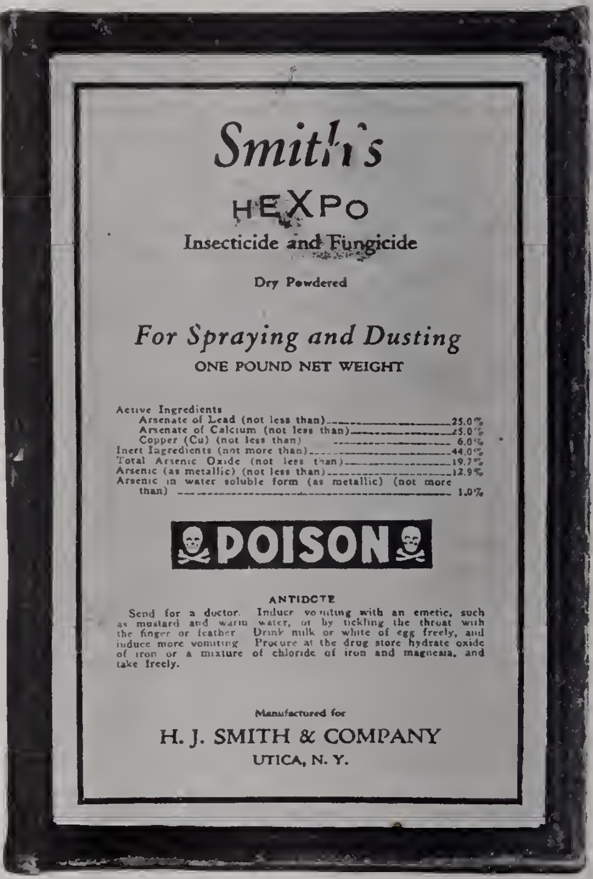
Lye is a poison! Keep it out of the reach of children! Many cases of suffering and death of little children could be prevented if this warning were firmly fixed in the mind of every woman and girl in the United States.

If you were to ask the average housewife if it would do a child any harm to swallow lye, she would reply to the effect that if used too strong, it will burn the hands, and that therefore it must be harmful to swallow. This is a case of reasoning power brought to bear in answer to a question, and the answer is correct. But the probable correctness of the housewife's answer to such a question is no safeguard. What is needed is such a state of mind that she would be horrified at the thought of a child's getting hold of a can of lye; so profoundly impressed must the mind be with the realization of the poisonous nature of lye, that her horror would be as great as in the case of arsenic, for instance.

Further to illustrate my meaning, the statement may be made that in my thirty-seven years' experience there have come to me hundreds of children poisoned with lye, but in all this time there has not come to me, nor so far as I am aware, to any of the many hospitals with which I have been connected, a single case of a child poisoned with "Rough-on-rats," or with Paris green, arsenate of lead, or any of the poisonous insecticides used on the farm. It is reasonable to suppose that the rarity of poisoning of children with these very commonly used preparations is due to the fact that everybody knows they are powerful poisons, and hence they are always kept out of the reach of children.

How has this almost subconscious, ever-present horror of these poisons been brought about?

The answer to this question is seen at a glance by looking at the labels of such preparations (Fig. 2). They have a "scare-label." In some instances this consists only of the word "poison" conspicuously printed. In most cases, however, there is also a "skull and cross-bones," which carries an instantaneous message to everyone, young or old, intelligent or stupid, educated or illiterate.



Smith's

HEXPo

Insecticide and Fungicide

Dry Powdered

For Spraying and Dusting

ONE POUND NET WEIGHT

Active Ingredients	
Arsenate of Lead (not less than)	25.0%
Arsenate of Calcium (not less than)	25.0%
Copper (Cu) (not less than)	6.0%
Inert Ingredients (not more than)	44.0%
Total Arsenic Oxide (not less than)	19.7%
Arsenic (as metallic) (not less than)	12.9%
Arsenic in water soluble form (as metallic) (not more than)	1.0%

POISON

ANTIDOTE

Send for a doctor. Induce vomiting with an emetic, such as mustard and warm water, or by tickling the throat with the finger or feather. Drink milk or white of egg freely, and induce more vomiting. Procure at the drug store hydrate oxide of iron or a mixture of chloride of iron and magnesia, and take freely.

Manufactured for

H. J. SMITH & COMPANY

UTICA, N. Y.

FIG. 2.

Reproduction of part of an insecticide label showing how carefully such preparations are labelled to protect the public from accidental poisoning. No such poisoning has ever occurred, so far as we have been able to learn. Lye poisoning, on the contrary, is relatively common.

Now let us look at how lye preparations are labeled. Many poisonous lye preparations do not bear one word of caution. Not one preparation of which I have knowledge has a warning equivalent to "keep out of the reach of children." Many preparations bear the directly misleading statements, "will not injure the most delicate fabric," "will not injure the hands." I do not mean to say that such labeling is intentionally misleading, as of course I have no means of knowing.

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*Read before the General Meeting of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 4, 1923.

When, twelve years ago, I first commenced to agitate this subject, few if any preparations bore on their labels any mention of their poisonous nature. Since that time a few conscientious packers of lye have put the word "poison" on their packages, and some have added antidotal advice; some others have put the word "poison" on their labels, but have so placed it that it is easily overlooked and conveys no striking impression. I do not mean to say that this obscuring of the warning is intentional, nor that it is a subterfuge to ease the conscience without diminishing salability, as of course I have no means of knowing. But what the intention may or may not have been has nothing to do with the fact that the housewife or maid does not receive a profound impression that the preparation is poisonous and should be kept out of the reach of children. Only two of the instances of inconspicuous labeling need be cited. The brand of lye that has been the cause of the greatest number of cases of stricture of the esophagus coming to the Bronchoscopic Clinic, bears the word "poison" in small type, with antidotal advice in still smaller type. Visibility is impaired and all "hit-the-eye" quality destroyed by the printing of the words of caution *vertically*. A still further impairment of the effect results from the fact that the words of caution are printed at the free unpasted edge of the end of the label, so that they are often made illegible or removed by handling. I have seen a number of such cans with this end of the label missing, leaving them without a word of warning. Again, I do not mean to imply that there was any intention of minimizing the visibility of the caution, as I have no means of knowing; but absence of intention on the part of the packer does not help the burnt child.

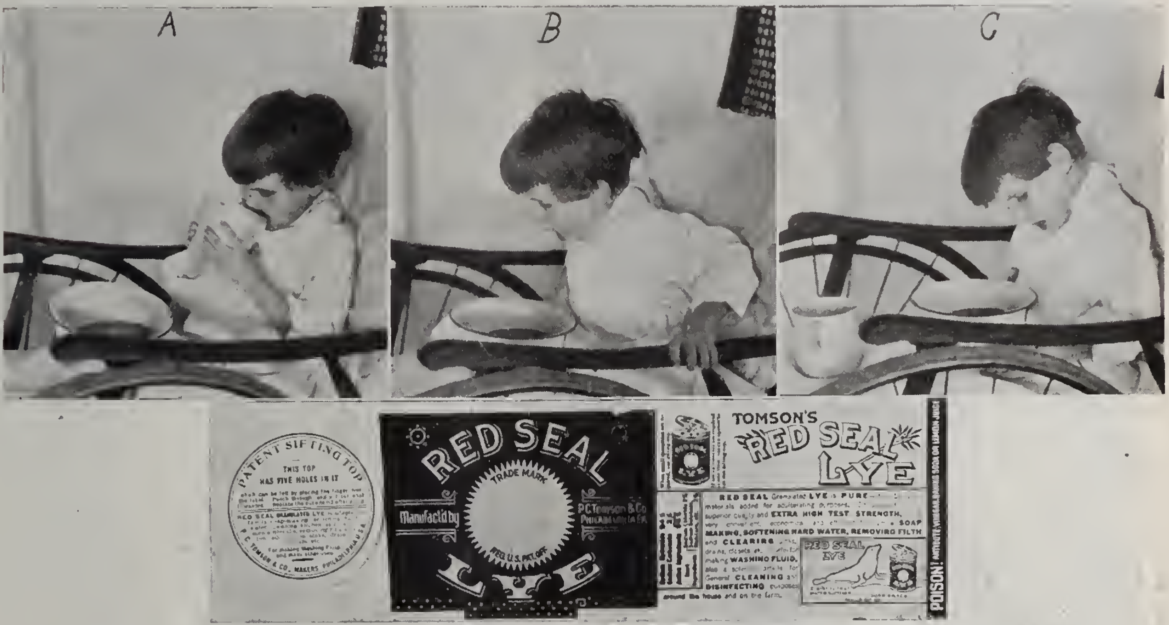


FIG. 1. Case No. L. C. 106, age 4 years, drank from a glass containing a solution of "Red Seal Lye." This was followed by severe burns of the mouth and throat with inability to swallow any food. Later, liquids could be taken with difficulty. Esophagoscopic findings: Ulceration with cicatricial stricture.

A. Flossie, burnt with "Red Seal Lye." Throat closed. Trying to swallow. Flossie is famished for food and dying of thirst.

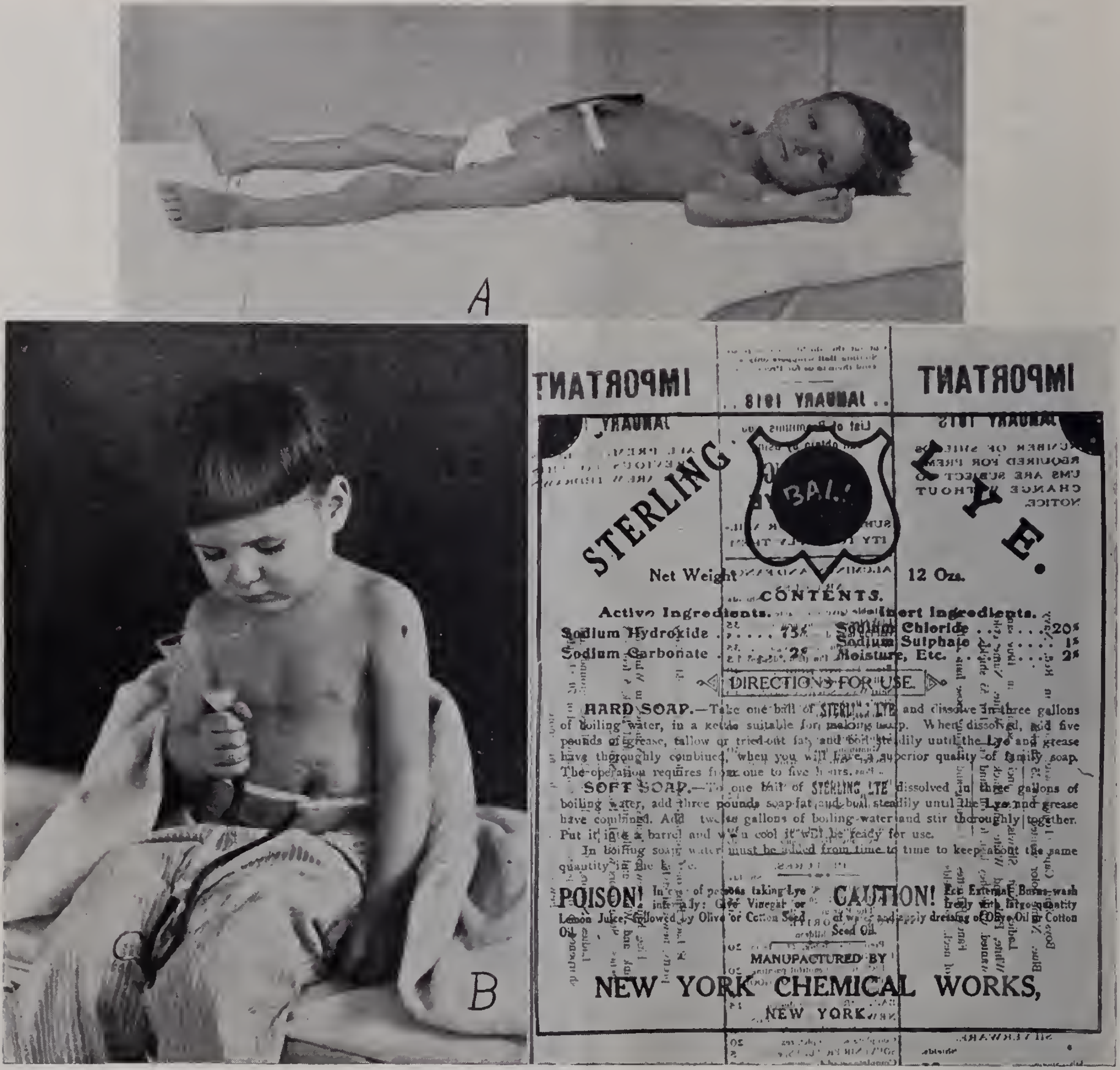
B. Flossie is retching to bring up food that is lodged in the esophagus because it cannot reach the stomach through the ulcerated and scarred strictures following the lye burns.

C. Flossie, worn out with hours of piteous efforts to swallow water, gives it up and will die of hunger and thirst if not operated upon to put a rubber tube in the stomach to tide her over until the stricture in her esophagus can be opened up.

After months of treatment she was discharged improved; treatment by retrograde Tucker bougies to be continued by the family physician.

Another instance of nullification of the warning is seen in the case of another preparation, on the label of which (Fig. 4) the word "poison" was printed diagonally on a background obscured by other lettering and also by its being printed in red letters on a red-and-yellow checkered background. I do not mean to say or imply that this obscuration was intentional. I am simply reporting facts.

Very few preparations have a caution in type large enough to be read without glasses by a person with presbyopic or other defect of visual acuity. In scrubbing, glasses are not worn. Fine printing is not read even on insurance policies. To be effective, a "poison" warning should "hit the eye."



STERLING LYE.

Net Weight 12 Ozs.

CONTENTS.

Active Ingredients.		Inert Ingredients.	
Sodium Hydroxide	75%	Sodium Chloride	20%
Sodium Carbonate	2%	Sodium Sulphate	1%
		Moisture, Etc.	2%

DIRECTIONS FOR USE.

HARD SOAP.—Take one ball of STERLING LYE and dissolve in three gallons of boiling water, in a kettle suitable for making soap. When dissolved, add five pounds of grease, tallow or tried-out fat and boil steadily until the Lye and grease have thoroughly combined, when you will have a superior quality of family soap. The operation requires from one to five hours.

SOFT SOAP.—To one ball of STERLING LYE dissolved in three gallons of boiling water, add three pounds soap fat and boil steadily until the Lye and grease have combined. Add twelve gallons of boiling water and stir thoroughly together. Put it into a barrel and when cool it will be ready for use.

In boiling soap water must be added from time to time to keep about the same quantity in the kettle.

POISON! In case of persons taking Lye internally: Give Vinegar or Lemon Juice, followed by Olive or Cotton Seed Oil.

CAUTION! For External Burns wash freely with large quantity of water and apply dressing of Olive Oil or Cotton Seed Oil.

MANUFACTURED BY

NEW YORK CHEMICAL WORKS,

NEW YORK.

Fig. 3. Case No. L. C. 102, age 3½ years. The child drank of a solution of "Sterling Lye" found among other articles in a smoke house. This was followed immediately by difficulty in swallowing any food and later inability to swallow even his own saliva. Esophagoscopic findings: Ulceration and complete closure of the esophagus.

A. Willie, taken months after his life was saved by putting a tube into his stomach. He was in a pitiable condition, wavering between life and death on admission.

B. Willie has had his dinner poured through the funnel by a nurse and now he is spitting the saliva, that he cannot swallow, into a funnel to aid in his nutrition.

We later got the esophagus opened so that he could swallow again. Death occurred ultimately from measles complicated by bronchopneumonia.

The warning on this wrapper is theoretically good; but it was obscure because it was printed on very dark paper with black ink, giving no contrast, and the cross printing on the back made it illegible. Certainly no presbyopic person could read the small printing without glasses.

Every hearer will wonder why, if some packers are already labeling their preparations adequately, it would not be easy to get all the packers to do so. There are two insurmountable obstacles to this:

1. There are and always will be a few unscrupulous men who will yield to the temptation of the increased profits of unfair competition. If a housewife finds one preparation labeled conspicuously "poison," and another preparation not so labeled, she will naturally choose the preparation she infers to be nonpoisonous. It is obvious that a poison label will cut down sales unless all preparations are similarly labeled.

2. If it were possible (and it is not) to induce all concerns at present engaged in packing lye, properly to "scare-label" their packages, what about the future? There is no monopoly on sodium hydroxide. Anyone can, at any time, on a few hundred dollars' capital order a ton of sodium hydroxide and a few thousand cans, and start to market a new brand of lye, labeled as he pleases. Therefore, in the absence of legisla-

tion, someone would have to watch every grocery in the United States, in perpetuity, in order to discover the new packer and plead humanity with him and it is needless to expect that one would have one hundred per cent successes in efforts to induce business men to destroy labels, print new ones, and replace the previously sold, improperly labeled stock.

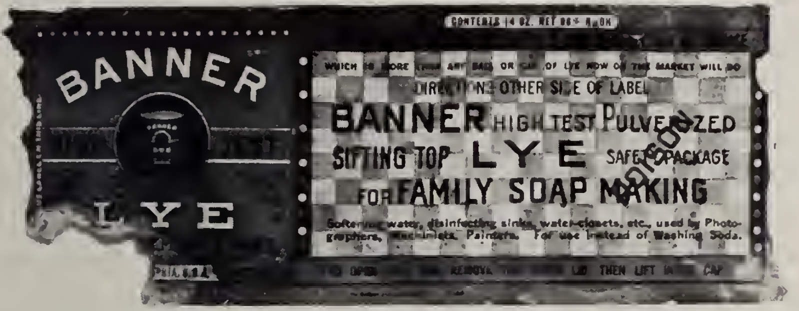

CONTENTS 14 OZ. NET
BANNER
LYE
PHILA. U.S.A.
WHICH IS MORE THAN ANY BAG OR CAN OF LYE NOW ON THE MARKET WILL DO
DIRECTIONS OTHER SIDE OF LABEL
BANNER HIGH TEST PULVERIZED
SIFTING TOP LYE SAFETY PACKAGE
FOR FAMILY SOAP MAKING
POISON
Softening water, disinfecting sinks, water-closets, etc., used by Photographers, Machinists, Painters. For use instead of Washing Soda.
TO OPEN REMOVE LID THEN LIFT INNER CAP

Fig. 4. The diagonal printing and the red and yellow checkered background on this label obscures the word poison and destroys the "hit-the-eye" quality it should have.

For the foregoing reasons it is obvious that moral suasion as an alternative to legislation is impracticable. Furthermore, it is also obvious that it is only fair to the conscientious packer who properly labels his package, that he be protected from the unfair competition of the competitor who is unscrupulous and indifferent to the suffering and death of little children.

The Remedy

1. Federal and state legislation both are required, because federal legislation alone could not control intra-state sales of a locally packed preparation. An excellent law has been passed in Pennsylvania and in Florida, showing that all that is necessary is to inform legislators of the necessity for legislation requiring that the word "poison" shall be conspicuously placed on every package containing more than a certain small percentage of caustic alkali. Druggists have for many years been compelled to put a "poison and antidote" label on all poisons sold to the laity; and moreover such poisons naturally go into the medicine-closet, whereas lye goes into the kitchen to clean utensils used in the preparation of foods, and worse yet, frequently it is placed on the floor where the children play. And it looks like sugar!

2. As a secondary means of prophylaxis, welfare workers, nurses, physicians, teachers and everyone, should teach persons using lye and all cleansing preparations and laundry powders the poisonous nature of such substances, and the necessity for keeping them out of the reach of children.

In conclusion, permit me to say that if anyone with a spark of human feeling in his make-up could see coming to the Bronchoscopic Clinic the pitiful cases of lye-poisoned children almost dying of hunger and thirst because they cannot swallow, he would demand of our legislators the law that every can of lye or cleanser containing lye be so labeled as indelibly to impress everyone who sees it with the caution: "Lye is poison, keep it out of the reach of children!" A can of lye should be so labeled that it will "throw a scare into" everyone who touches or even sees it.

DISCUSSION

Dr. Ellen J. Patterson (Pitburgh, Pa.): It is superfluous to ask me to discuss this paper by Dr. Jackson, because he has gone into the matter so very thoroughly.

One thing he did not mention (that he was too modest to mention) is that this bill in Pennsylvania was passed through his own influence and the funds for carrying on the campaign were supplied from his own bank account.

The way in which these children get the lye is sometimes very pathetic. One child we had under treatment was out playing, and being thirsty he picked up a can lying upon the ground, took some water out of a stream and drank it. The result was that he was brought to us later, in a state of water starvation. He had been unable to drink water for three days, and a gastrostomy had to be done immediately in order to save the child's life.

One other thing Dr. Jackson did not mention is the susceptibility of these children to infections of the respiratory tract. Stricture of the esophagus sometimes prevents the swallowing of the saliva and when the esophagus becomes filled with saliva some of it spills over into the larynx, the child aspirates it and develops an infection of the respiratory tract.

As Dr. Jackson said, it is not only important to have these laws passed, but it is very important to see that the laws are enforced. It seems to me that is a very important point at the present time.

Dr. F. J. Bishop (Scranton, Pa.): Everyone who is doing bronchoscopic work has several of these cases on his list, and it surely is terrible to see these patients in a state of water starvation.

My point is that this Society owes to Dr. Jackson for his time and for his money a vote of thanks. I move that this Society extend to Dr. Jackson a vote of thanks for his work in this respect.

(Motion seconded and carried by rising vote.)

OCULAR MANIFESTATIONS FROM A TRAUMATIC ENCYSTED HEMORRHAGE IN THE BRAIN*

E. J. STEIN, M.D.
LANCASTER, PA.

In presenting this case I have in mind two very distinct ideas that I believe need emphasis.

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*Read before the General Meeting of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 3, 1923.

It has long been taught that one of the diagnostic signs of intracranial pressure, whether from tumor or other cause, is optic neuritis or choked disc. While this is true, yet as this case will illustrate, it is too late a sign to be of any particular value in so far as the patient is concerned, and as a matter of good practice, I believe we should rather feel that when choked disc appears we have been tardy in our diagnosis.

The second idea I wish to call again to your attention, is the fact that any injury to the head sufficiently severe to cause even a few minutes of unconsciousness should be looked upon as a condition demanding extreme caution, to be sure that something is not "going on" inside the skull which will cause trouble of a serious nature.

Case Report

Briefly stated, this patient—R. E., male, aged 17, a deaf mute—appeared at my office on December 28, 1922, having been referred to me by Dr. C. R. Farmer, of our city, because of a persistent diplopia with some headache. The patient stated that while playing a game of football on November 11, 1922, he was struck or kicked on the back of the head in the left occipital region, which rendered him unconscious. He was carried to the side lines and quickly regained consciousness. One week later and again on Thanksgiving day he played another game of football but did not feel well after the games. He became sick a few days later (early in December) with what appeared to be a gastric upset with some nausea and vomiting as well as dizziness. He spent two weeks in the school infirmary about the middle of December, when he returned home for his Christmas vacation.

On examination, I found that there was a horizontal diplopia, although muscular movements of the eyeball were good and full in every direction. Diplopia he thought was more marked on looking sharply to the right. There were no sore or tender spots about the head at the first visit. Examination of the fundi showed no great change and the note was made that "the disc margins are slightly blurred on the nasal side—otherwise negative." Patient was kept under observation and on January 4, 1923 after several days of severe pain described as "over the right eye," which was unaffected by anodynes and finally morphin, I noted a beginning fullness of the retinal veins but no appreciable swelling of the discs—in fact the lamina cribrosa of the optic disc could always be seen throughout his illness. The blurring of the nasal side of the discs remained unchanged. The pain began to be referred to the right frontoparietal area and slight pressure made him wince.

The symptoms remaining unchanged the following day, the patient was sent to the hospital after being seen by a general surgeon, Dr. John L. Atlee, who suggested using the spinal manometer to determine accurately the extent of the cranial pressure. On January 5, 1923, the spinal manometer reading was taken and registered 24 mm. to begin, and after withdrawing 10 c.c. it fell to 18 mm. The pulse went up following this removal from 48 to 64. Patient was slightly relieved but two days later manometer reading, to begin with, registered 40 mm. and after removing a few drops registered 30 mm and following removal of 10 cc., registered 16 mm. and the pulse rose to 74. Analysis of the fluid showed blood strongly positive; globulin, excess over normal; sugar, normal reduction; cell count, 24 per c.mm., fifty per cent of total cells being red blood corpuscles.

Decompression was decided upon and on January 8, 1923, a right temporal craniotomy was done by Dr. Atlee assisted by Dr. Farmer. The notes made by Dr. Atlee were as follows:

"Usual temporal decompression, dura under great pressure. Opened a peculiar bluish-gray sac which seemed to cover the brain, and on opening evacuated a large amount of old fluid and clotted blood. This sac proved to be the organized wall of an old blood clot which extended forward over the frontal lobe to the orbit and had an estimated capacity of between three and four fluid ounces. Two (2) rubber tissue drains; silkworm-gut; silk No. 6; plain catgut No. 0."

After a few rather stormy days, the patient recovered and left the hospital in twenty-four days in very good condition, all the symptoms having subsided except the fullness of the retinal veins and the blurred nasal edges of the optic discs. It was necessary to reopen the wound in May, although he remained in the hospital only a few days. There has been more or less disturbance, the wound having opened spontaneously during the month of August, but patient now seems well.

Here was undoubtedly a case of primary injury with the main force expended on the left occiput with contrecoup injury to the vessels in the right frontal area, causing hemorrhage no doubt small in the beginning and by his exertion and moving about increasing in size and becoming encysted and causing a tumor with very few symptoms. Indeed had it not been for the diplopia I do not believe the average physician would have thought such an extensive hemorrhage could have followed such an apparently simple injury as is often seen in many athletic contests.

My own observations of the eye grounds could not establish with any assurance that intracranial pressure of any moment existed, until almost two months after the injury; yet the spinal manometer showed a pressure of 24 mm. It would be extremely interesting had we been able to get the pressure a day or two after the accident and again after having played his second game of football. I have no doubt that at that time he had the bulk of his hemorrhage from moving about and exercising. From just what artery or vein the hemorrhage came was not determined at the time of operation, and while it must have been of some size, yet we did not feel it was necessary to search for it as there was no bleeding after the operation was completed.

We decided upon decompression chiefly upon the manometer findings and the area selected for the craniotomy was done with the idea that there was a contrecoup damage and we felt that an exploration was justified. The patient being a deaf mute greatly hampered our communications, but being mentally alert as well as a clever young man, he was able to state just how he felt and where he had trouble.

Examination of this patient September 7, 1923, showed his condition to be fairly good. He is up and around, although it has only been for the past month that his disposition and mental state have become more natural, according to his mother's statement, and there is at times a discharge of bloody fluid from his wound. Examination of his eye grounds on this date showed a swelling of both optic discs of one diopter with fullness of the veins and slight tortuosity. In fact there is more swelling now than there was before his craniotomy. The question naturally arises, is optic neuritis or choked disc due to pressure or does it follow a rather protracted inflammation of the brain and meninges? Certainly I will place more stress upon manometer findings in the future than upon the presence or absence of optic neuritis or choked disc.

The chief thought I desire to convey in presenting this case is to question the value of the old and standard teaching of attempting to establish the presence of a tumor in the brain by the presence of choked discs. In this particular instance there never was any sign of swelling of the discs and only after we had arrived at a definite conclusion that some intracranial condition was present because of the severe localized pain as well as localized sensitiveness to pressure, did even the fullness of the veins appear. Of course the diplopia existed right along and it was my thought that possibly a fracture of the skull had involved the abducens nerve and with alterative treatment the exudate might be reabsorbed and function return. When the manometer reading was taken, however, and found to be excessive and increasing in amount, and when the slow pulse rate was relieved by the relief of the pressure, then we concluded that operation only could relieve and the right parietal region was selected because of the localized area of pain and tenderness. The findings were a distinct surprise to all of us as we could not conceive of such an extensive encysted hemorrhage giving rise to so few symptoms. It is of course possible that had this patient not been a deaf mute, some hints might have been obtained from his general bearing, way of talking and manner, but to me he seemed like a bright and alert young man, answering questions readily and without hesitancy. Words never seemed to fail him, even though they were characteristic of mute speech. In so far as I could determine, there were no localizing symptoms. Orientation, tactile, sensory and motor functions were normal everywhere, and with dead eighth nerves of course these could be of no help in this instance.

I was particularly anxious to see what effect the operation might have on his hearing and speech but none of us could see any change whatever in either one.

To my mind the symptom of choked disc must give way to the manometer readings and these readings will be my guide in the future rather than to wait for optic neuritis of whatever grade or name you might call it.

In going over the literature, I did not find a single case of encysted hemorrhage reported as such, although my search was not complete and only covered the more recent years.

Some of the articles are well worth going over and I shall take the liberty of quoting extensively from an article by Molene in which he says:

"Tumors of the frontal lobe have nevertheless been encountered quite frequently, as may be inferred from the series collected by Clarke (Fred B.) in which there were fourteen instances in ninety-six cases of brain tumor. Oppenheim has said, 'Apart from aphasia we know of no characteristic localizing symptom of tumor of the frontal lobe.' The difficulty of localizing by clinical signs is unusually but significantly expressed by T. Grainger Stewart, when he says, 'The clinical picture of frontal tumor is characterized by *the absence* of signs pointing to involvement of other regions of the brain rather than by the presence of special focal symptoms.' According to the same author, 'general symptoms are usually present, namely headache, optic neuritis and vomiting.'

"As a result of their experience with war injuries Marie and Behayue have concluded after many observations that deep lesions of the prefrontal region give rise to a syndrome characterized by disturbance in orientation in space while there is an absence of all objective signs of a lesion of the nervous or vestibular systems, and headache, vertigo and dizziness were entirely absent. In the course of the same report, however, it is admitted that 'in spite of the controversy, the question of the physiological rôle of the anterior part of the frontal lobe remains obscure.' Chatelain is quoted, 'Up to the present time there is no true symptomology of the frontal lobe.' J. W. McConnell's patient, who had a tumor involving the first and second convolutions of the frontal lobe presented disturbance in writing when he made a voluntary attempt or when he wrote spontaneously, as well as when he wrote from dictation, while when copying, his writing was 'practically perfect.' "

In his conclusions Molene states that "vomiting, headache and optic neuritis may be absent in subcortical lesions of the frontal lobe, especially in the absence of encroachment on the membranes: Unilateral optic atrophy with papilledema of the contralateral nerve is to be interpreted as proceeding from the inferior surface, although bilateral papilledema may occur as a result of rapidly increasing intracranial tension induced by frontal growths as well as by those occurring elsewhere."

Wechsler, in a paper on the "Significance of Papilledema in Brain Tumors," states in his conclusions that papilledema is the best single sign of brain tumor. "It is most often a *late* sign. It is most common in certain locations such as the pineal or quadrigeminal region, even up to one hundred per cent, least common or altogether absent in others such as the hypophysis. Being usually a late sign it is not the best guide to treatment, although it is always an urgent one. Every case of brain tumor becomes surgical, though not necessarily operative, as soon as a diagnosis of brain tumor is made, whether localized or not and whether there is choked disc or not. Greater knowledge of the fundus changes in brain tumors is needed and efforts should be made to restrict as far as possible the use of the terms 'papilledema' and 'optic neuritis' to sharply defined ophthalmoscopic pictures."

That mine was a clear case of contrecoup injury to the brain is hardly deniable, as the patient clearly states he was kicked in the left occipital region and the damage occurred in the right frontoparietal area. Some interesting observations were made by Caldwell on this subject, which he brings out as follows:

"Tillmans experiments concluded".—"The conclusion from these experiments is that the contrecoup phenomenon occurs only when the freely movable skull is struck a blow or when the skull itself, while moving, is stopped by a solid mass."

"Summary.

"1. Contrecoup injury to the brain is quite frequent, occurring in at least sixty per cent of all skull fractures.

2. It always indicates that the head was in motion or freely movable at the time of injury.

3. It occurs most frequently in fractures of the posterior fossae.

4. With the history of head injury while the skull is in motion and persistence of symptoms after operating, contralateral exploration may be justified."

In all the articles I read, the same general trend is present, namely, that choked disc was not found and when found it was a late symptom. Aboulker, in an abstract from the Journal of the American Medical Association, reports ten typical cases of intracranial abscess. In three cases with a very large extradural abscess, and in four cases in which the abscess was in the brain, choked disc was never found and there was no pain on pressure or percussion and no motor or sensory disturbances. Headache with change of character and sluggishness in the mental processes is constant and early with an abscess of the brain. T. A. Williams also calls attention to this in an article on "Early Diagnosis of Brain Tumors," as follows:

"Another drawback to early diagnosis in brain tumor is the belief, implicit in many practitioners, that one must find a swelling of the optic disc as well as vomiting and complaints of headache before diagnosing tumor. Now, these symptoms come too late and are indicative merely of greatly increased intracranial tension."

Walter Dandy attempts to diagnose brain tumors by roentgenograms, after withdrawing the cerebrospinal fluid and injecting air, but this procedure is not safe to my mind; and Eagleton, in a paper read before this Society, called attention to the danger of the spinal puncture in some cases, saying that where a diagnosis is to be established, only safe measures should be resorted to in order to have your patient in the best possible condition. William Sharp, in his Textbook, "Diagnosis and Treatment of Brain Injuries, etc.," states in the chapter devoted to the manometer:

"Until three years ago the ophthalmoscopic examination was considered the most satisfactory method of determining the presence or not of, and the degree of, an increased intracranial pressure; during the past three years the significance of the pressure of the cerebrospinal fluid and its accurate registration by means of the spinal mercurial manometer have been so developed that the ophthalmoscopic findings, unless the increased intracranial pressure is of sufficient degree to produce the condition of 'choked disks' (a rare observation in these patients having brain injuries), are merely indicative of intracranial pressure, whereas the findings of the spinal mercurial manometer are not only confirmatory, but the degree of increased intracranial pressure can be most accurately established. The most practical of these instruments is the one devised by Landon; it is similar to a blood-pressure apparatus and there is no risk to the patient other than that of a lumbar puncture which is practically nil when properly performed.

"The normal pressure of the cerebrospinal fluid, as registered at lumbar puncture by the spinal mercurial manometer, varies from 5-9 mm. in adults and 4-8 mm. in children (approximately 16-30 drops per minute); 1 or 2 mm. have been obtained in patients in severe shock, and frequently in children having an agenesis or lack of development of the brain associated or not with the condition of microcephalus."

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DISCUSSION

Dr. Charles W. Burr (Philadelphia, Pa.): The more experience I have, the more I like to depend on my own senses and the less upon instruments of precision. Nowadays no interne can tell whether a patient has fever unless he uses a thermometer. The consequence is that many patients have fever for a long time because no one knows the importance of looking at the patient's face and feeling his skin to judge whether he has heightened temperature.

I think the same thing is true, to a degree, in the use of the manometer to determine the presence of tumor of the brain. A tumor is not simply a swelling.

A tumor, unless it is a fibroid, has a chemical effect and in addition to the tumor mass there is often a diffuse increase in brain volume. Sometimes the increase is due to edema, sometimes to overgrowth of the connective tissue structures of the brain. Therefore the symptoms that are produced by the tumor are not only due to actual mechanical pressure, not only to mechanical displacement of certain nerve centers and fibres, but also to a general constitutional effect. Choked disc is very rare in abscess and hemorrhage of the brain. It is not at all rare in cerebral new growth. I am not inclined to think that choked disc is altogether due to simple mechanical increase of pressure, because you may find it in new growth where the tumor is small.

Of course the manometer is a useful instrument. So is the thermometer, and so are all instruments of precision, but it is wrong to wait until there is a great choked disc coming out into the optic globe before you make a diagnosis of new growth. I think it is not right to make a diagnosis of new growth within the brain simply because the cerebrospinal fluid pressure is increased. You must decide according to all the symptoms. The thing that was acting in the Doctor's mind when he made his diganosis was not simply that the cerebrospinal fluid pressure was increased, but the history of the case, the history of the injury, the presence of pain and all those things were taken into consideration.

I think it is unsafe to decide that operation shall be done simply on manometer findings. Unless the instrument is used by a man who knows how to do it, false readings will occur. Immediately after the introduction of the needle, as a rule, there is a rise of pressure, then a fall, and then it remains at a level. Another possibility of error is that if the patient coughs or sneezes pressure goes up. You would suppose that it would also rise on deep inspiration, but sometimes it falls momentarily.

Dr. Stein (in closing): In regard to the idea that may be conveyed that we diagnose absolutely by the manometer, that is not true, and I did not mean that I should attach more importance to the pressure than I should to the optic neuritis. Optic neuritis is slow in appearing and the manometer will help you a lot in that instance.

CONCERNING VERNAL CONJUNCTIVITIS*

SOME PHASES CONNECTED WITH ITS CLINICAL FEATURES, DURATION, PROGNOSIS AND TREATMENT

WM. CAMPBELL POSEY, M.D.
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Vernal conjunctivitis manifests such a determined tendency to recur annually with the advent of warm weather, that one naturally questions: Is there no self-determination of this disease, no hope for its running itself out after a certain number of years, and if so, is there any fixed span of time in which this is accomplished? The observation of a considerable number of cases over a long period should be of assistance in answering such a query, and with this in mind a review was made of all my private cases affected with this disease which had been under observation sufficiently long to be of value in such an investigation.

This analysis revealed that in mild cases, those characterized clinically by the typical discoloration of the conjunctiva and the appearance of flattened granulations upon that membrane, with but slight or no bulbar involvement and with cessation of symptoms in cold weather, the disease often disappears after a period of from 8 to 10 years, very rarely in the four to six years mentioned by Saemisch in his classic article. In the severer types, those cases in which there is a persistence of the symptoms, though in less aggravated form, through the winter months, with the presence of large hard and ofttimes rounded granulations studding the conjunctiva, with or without limbal involvement, it was ascertained that despite almost continuous alleviating treatment, the disease may continue for twenty years or even longer.

This is in accordance with the experience of others. In a monograph upon vernal conjunctivitis which I read before the Section on Ophthalmology of the American Medical Association in New Orleans in 1903, reference was made to a case observed by Weeks in the annual recurrences of 17 years and another by Schwenk of 18 years. Saemisch cites a case he had followed for 23 years. In this instance, one of the palpebral type, with annual recurrences in the cold weather, the disease had appeared at 12 years of age. In the latter years of Saemisch's observations, the palpebral prominences grew less and less distinct until they were no longer discernible, the conjunctiva becoming smooth and covered with a whitish network of scar tissue permeated with a fine vascular tissue.

I have observed one of my cases almost every year since 1899, a period of twenty-four years, another since 1902, a period of twenty-one years, another thirteen years, all occurring in healthy males. Another case, a female, with rather poor health, has been seen more or less frequently during the past 16 years. In all of these the disease appeared in early childhood and assumed the severe type. The first case presented the pericorneal involvement suggestive of phlyctenular disease which is so frequently observed in vernal conjunctivitis. In the two cases next alluded to, both corneæ had suffered epithelial denudation and some interstitial involvement when they were brought to me, so that paring down of the large, round, hard granulations which had irritated the cornea and given rise to this condition was necessitated.

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*Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 2, 1923.

Though a cursory glance might pronounce the conjunctiva in these cases, after these years of inflammation, to be normal, a closer examination reveals a slight atrophy of that membrane, as indicated by an abnormal smoothness and the presence of a finely reticulated superficial membrane of blood-vessels. Furthermore, the advent of spring each year is usually attended by a slight renewal of subjective symptoms of irritation, such as lacrimation, itching, with at times a catarrhal discharge, provoked by a mild conjunctivitis.

The notes on two of my cases, those of a father and son, are of interest as bearing upon two factors of the disease, namely, *the influence of heredity* and *the striking refractive changes which may be occasioned by vernal conjunctivitis of long standing.*

Case I.—N. M. F., aged 33, stated that vernal conjunctivitis first appeared at 11 years of age; that the symptoms were very severe for several years, but in consequence of regularly continued treatment, had pretty much disappeared by his twentieth year; that vision had been much affected in the right eye, for as a young boy he could shoot well with that eye, whereas in later years he had been compelled to have recourse to the left eye in that pursuit.

At the time of my first examination, although in the spring of the year, the conjunctiva was normal and both eyes free from irritation. Both corneæ were, however, slightly hazy and conical. Refraction was as follows:

O.D. — S. 3.5 D. ○ — C. 6. D. ax. 95° = 5/35
O.S. + S. 2.75 D. ○ — C. 9. D. ax. 92½° = 5/9

Case II.—N. M. F., Jr., aged 7 years, son of the foregoing. Vernal conjunctivitis first appeared in both eyes at five years of age, and at the time of my examination, April 12, 1910, symptoms of that disease in an acute form were present, the conjunctiva being discolored and covered with large, hard, rounded granulations. There was some slight pericorneal injection but the corneæ were clear. The usual alleviating local treatment was prescribed. Several months later, the granulations having increased in size and threatening the cornea from pressure, these excrescences were pared down with a sharp knife. For several years there was scarcely a time when the eyes were free from irritation, the symptoms persisting through the cold weather and defying all treatment. In April, 1912, two years after my first observation, refraction under atropin was as follows:

O.D. — S. 1.25 ○ + C. 2. ax. 75° = 5/7½
O.S. — S. 0.75 ○ + C. 3. ax. 90° = 5/9

Since that date the patient has been under my more or less constant supervision, and year by year there has been a gradual amelioration of his symptoms. So far as has been possible, everything which might act as an excitant to the ocular mucous membrane, such as dust, smoke and extremes of heat, has been avoided. Locally, solutions of adrenalin, weak percentages of cocain and dilute acetic acid have been of greatest avail. Any involvement of the bulbar tissues has been combated with solutions of atropin and yellow oxid salve. At no time has there been more corneal involvement than a slight haze of the periphery of the membrane, this being most marked in the left eye. When seen a few months ago, refraction was as follows:

O.D.V. with + C. 2.25 ax. 70° = 5/5
O.S.V. + S. 0.25 D. ○ + C. 7.5 ax. 180° = 5/6

Wilder, Stevenson, Jackson, Gifford and Tiffany have also reported cases in which heredity seemed to play a rôle.

In the April number of the *American Journal of Ophthalmology*, 1919, Gonzales, of Mexico, drew attention to the irregular astigmatism that vernal conjunctivitis develops in eyes that were emmetropic prior to inflammation, and reported a series of cases where such was the case. He attributed these changes to the following factors: "First, the conjunctivitis appears in the eyes of children, eyes in the course of development; second, the nutritive modifications which the pericorneal infiltration must bring to the cornea; and third and very important, because of the mechanical influence of the pressure and friction through the closed eyelids, which the little patients constantly rub with their fingers, in order to calm the most persistent subjective symptom and annoyance of the disease, the itching."

In one of his cases the corneal alterations went so far that keratoconus developed. My cases I and II, just cited, are instances of the same thing, as a glance at the refractive changes will indicate. A third case is similarly illustrative.

Case III.—Boy, age 11 years at time of first observation. Large hard granules demanding operation. Observed annually since 1902. Some pericorneal inflammation, especially in the right eye at time of annual recurrences, but not of a severe type. Refraction, under atropin, as follows:

1903 O.D. + S. 0.75 ○ + C. 1.75 ax. 85° = 5/9
O.S. + S. 1.5 ○ + C. 0.75 ax. 110° = 5/5
1905 O.D. + C. 2.5 ax. 100° = 5/7½
O.S. unchanged
1911 O.D. + C. 3.5 ax. 95° = 5/7½
O.S. unchanged
1916 O.D. — S. 0.50 ○ + C. 4. ax. 95° = 5/6
O.S. unchanged
1922 O.D. — S. 0.62 ○ + C. 4. ax. 95° = 5/5
O.S. unchanged

This patient finished school, graduated from the Dental Department of the University of Pa., and is a very busy dental practitioner, using his eyes hard.

Frequency and Distribution

Gonzales, writing from Mexico and quoting the observations of other colleagues from that country, without citing statistics regarding the frequency of vernal conjunctivitis in Mexico, gives the impression that this form of conjunctivitis occurs there much more commonly than is the case elsewhere. Juan Santos Fernandez, on the other hand, in the not far distant island of Cuba, where it is warm through all the year, states that out of a total of 61,000 eye cases observed by him, there were but six instances of vernal conjunctivitis, all of which came from Cuban cities. Feingold, in New Orleans, reports the disease of rare occurrence in that locality. In a characteristically able paper based upon the study of 44 cases observed over a period of 15 years and an experience gained by 10 years of earlier observation of scattered cases in Philadelphia, Jackson concluded that the disease is more common in the very elevated region of the western United States than elsewhere in our country.

In my paper of 1903, which contained a summary of the experience with the disease of leading ophthalmologists from all parts of the United States, it was ascertained that though vernal conjunctivitis existed in all parts of our country, it was always rather a rare condition, occurring in a proportion ranging from one case of vernal conjunctivitis to every 200 to 500 of conjunctival disease. My observations during the past twenty years tend to the corroboration of these figures. It would appear that the same frequency maintains in European countries. Neither would I change the figures published in my earlier paper regarding sex liability to the disease, as affecting 85% of males and but 15% of females. The apparent immunity of certain regions may doubtless be explained by its failure of recognition in such localities. Thus it is scarcely to be credited that, in 191,000 cases treated in Petrograd over a period of five years, there occurred but one case of vernal conjunctivitis.

Prognosis and Treatment

Now that radium is more generally available, the prognosis in vernal conjunctivitis may safely be asserted to be much more favorable and the likelihood of limiting the course of the disease greatly enhanced. This phase of the subject was so admirably treated by Shumway before this Society four years ago that any extended review of the use of radium in vernal conjunctivitis is unnecessary at this time. I shall, however, refer briefly to a case in which the application of radium, while curative of the disease, provoked unfortunate sequellæ.

J. E. P., now 24 years of age, has been under my observation for the past five years. He had had competent ophthalmic oversight since the disease first affected his eyes when he was but five years of age, the ocular inflammation coming on after a prolonged case of pneumonia. The usual alleviating collyria have been prescribed but each season the symptoms recurred, some years with greater severity than others.

At my first examination the findings characteristic of vernal conjunctivitis of the palpebral type were observable in each eye. The granulations were large and prominent, but flat, and in the right eye there was some involvement of the perilimbal tissues, especially to the nasal side, at which point the cornea was also faintly hazed. Under atropin the refraction was:

O.D. + S. 1.50 = 5/15
O.S. + S. 0.75 ○ + C. 1.37 ax. 65° = 5/6

In addition to the local treatment usual in such cases, the patient was referred to Dr. H. K. Pancoast for radium therapy, four treatments being applied over a period of the two succeeding months. Considerable reaction was evoked by this treatment, and several weeks following the last application styes appeared in the lids which persisted for several months and were followed by a dropping out of many of the cilia, none of which have ever returned. The radium, however, has exercised a very beneficial effect upon the disease, greatly lessening the symptoms in the four years succeeding. Last summer, the eyes were but slightly injected and the conjunctiva smooth and free from granulations. Refraction was as follows:

O.D. + S. 1.5 ○ + C. 0.62 ax. 170° = 5/5
O.S. + C. 0.87 ax. 60° = 5/5

Arnold Knapp tells me that he, too, has seen unfortunate sequellæ after radium, though his case happened to be one of trachoma. He writes:

"The case received a radium treatment on April 15th, with a very severe reaction 2 days later and pain beginning 4 weeks later. The lids were red, conjunctiva was congested, corneæ dull and vascularized like a keratoglobus. Vision was reduced to movement of hands. This condition has persisted for 3 years, and the question of enucleation has come up. The diagnosis of trachoma was uncertain, as the right eye had not been affected. Was first seen in 1919. The upper palpebral conjunctiva was red, fleshy, with irregular, gray follicles with a well-marked pannus. The radium caused the loss of the eyelashes and of the eyebrows, and the thickening and reddening of the lids, with the changes in the conjunctiva and cornea just described.

"I forgot to say that the patient was treated for some time with tuberculin, on the supposition that the condition was tuberculous, and as the process did not improve, radium was advised."

In both of these cases it is not unlikely that the sequellæ arose from a too protracted or powerful application of the radium. In any event, in a number of other cases treated for me by Dr. Pancoast no such serious consequences arose. In closing, I shall read a recent communication to me from Dr. Pancoast regarding his experience with radium in vernal conjunctivitis.

"I have received your letter requesting a statement in regard to our views concerning the treatment of vernal conjunctivitis. The results under radium treatment with us have been, on the whole, very satisfactory. We do not use x-rays for the purpose because radium can be much more easily controlled and especially the penetration.

"Our method is to evert the lids and treat the entire conjunctival surface which is involved and at the same time protect the eyeball against any unnecessary exposure. If the bulbar conjunctiva is involved, one must be very careful in regard to the dosage because of the reaction which results, and the dose is usually an amount less than that for the lids. The reaction to radium is rather intense and we always prefer to treat cases during the quiescent period of winter rather than to add the discomfort of a radium reaction to that which the patient already has from the activity of the disease. It is very important not to give too much treatment and to get too much cicatricial tissue. The main difficulty encountered in cases in which the lids alone are involved is in removing the condition from the region of the upper border of the cartilage in the upper lid. Our method is to employ a radium tube in an aluminum holder with comparatively little filtration in order to get as much beta ray effect as possible. The holder is attached to a handle so that the hand of the attendant does not have to be exposed.

"A method which has been used elsewhere and which is recommended is the use of a considerable amount of radium emanation for a few seconds over the involved area of the lids and in this way a number of cases can be treated at one time. One, of course, must be very careful about the dosage where such a large amount of emanation is used. The advantages of this method are in the saving of time and in getting a pure beta ray effect. We believe that it is much better to give a safe application than to attempt to control the disease at one sitting. It is necessary that the reaction subside following each application before the next application is made."

DISCUSSION

Dr. Edward Jackson (Denver, Colo.): As is customary, Dr. Posey has so well covered the subject that there remains perhaps only a general comment on certain points that seem more important.

In the first place, there is reason to believe that the failure to diagnose vernal conjunctivitis in some localities is due to lack of observation. I know of several men who, after they recognized a case, saw several others in a short period, in regions in which they had previously been practicing without recognizing any. It is easy for those who devote much of their time to trachoma and have not had their attention called to vernal conjunctivitis, to make a diagnosis of trachoma in these cases, especially in the more aggravated form; while the cases that are not severe are usually passed over as conjunctival hyperemia and not much importance attached to them.

The diagnosis I think can usually be made from the history, certainly after the first year or two of the affection. There are a few cases, but they are very few, that seem to be as bad in the winter as in the summer. Questioning as to the recurrence from season to season will generally bring out the fact that it first began in the spring, or summer, and has been worse during the warm weather. Seasonal influence is very striking in some cases. A few years ago I watched a case during the latter part of the summer, giving palliative treatment, but without very great relief. The vision was disturbed more than I have seen in any other case of vernal conjunctivitis. His vision was running about one-half, or as low as one-third of standard vision. Within three days after the first frost in autumn, he came in showing normal vision, without any further treatment or any other change to account for it.

I have seen another case in which the man gave a history of one or two years of conjunctivitis. He went to work in a mine soon after the attack came on in the early summer and worked there through the summer, and for a few weeks was entirely free from any evidence of vernal conjunctivitis. He then began to work above ground, had another attack, and was told to go back to underground work.

I have seen several cases relieved by removing from Colorado to other localities. The evidence of Dr. Gonzales of Mexico points in the direction of my experience, that it is not the heat so much as the dust and dryness that determine the occurrence of vernal conjunctivitis. The experience of Dr. Feingold in regard to heat is conclusive. Perhaps in a cold, dry country there may be more freedom from the trouble than where it is hot and dry. Certainly cases have been relieved by a climate marked by a relatively low summer temperature and a good deal of moisture in the atmosphere. On the Pacific coast relief is found in the climate of Puget Sound, but in the upper Mississippi Valley, or Canada or the Lake region we can expect cures.

To my mind radium has solved the problem of the treatment of vernal conjunctivitis. I have never seen it fail. I have seen it tried on cases that have gone on for ten or fifteen years, and one particularly that had been under my care for six or eight years, in which the very striking results from radium application were illustrated. It is probable, as Dr. Posey has pointed out, that an overdose accounts for bad symptoms that may occur. The dose required is very much less than that needed for malignant growths. Perhaps thirty to fifty millicuries for ten or fifteen minutes. That is ten to twenty millicurie hours against one hundred and over for carcinoma. So a worker with radium who has not been instructed and has not done anything with a case of vernal conjunctivitis, is very likely to give an overdose.

Dr. Edward A. Shumway (Philadelphia, Pa.): Perhaps as a result of the paper I read before the Section on Pediatrics of this Society, I have had an opportunity of seeing more than an ordinary number of these cases. I wish to corroborate all of Dr. Posey's statements. I am quite sure that the diagnosis is not always made. The first case I ever saw was in Prof. Fuch's clinic in Vienna, and when I got back to New York I recognized a case which had been treated at one of the prominent hospitals as trachoma, as being unquestionably a case of vernal conjunctivitis.

As to heredity, I have never seen a case occurring in father and son. I have seen two boys in one family affected, but in a mild degree, and they did not require treatment with radium.

Certainly radium should only be employed in the very severe types. The ordinary cases that are seen with a conjunctivitis, with an intense itching that comes on in summer time, can be treated in other ways and made comfortable until it gradually disappears in the course of years. However, in the severe types there is no question that radium is by all means the most efficient remedy. But it should be used carefully. In the early days, when we had little experience, I have seen cases where there was permanent loss of lashes. In those early cases the radium was applied in one position, but now it is applied in various places across the lid so it is not placed in close contact with the lashes at any one point, for more than a few minutes. I have seen one case of corneal involvement, a corneal ulcer, but evidently the disturbance was not from the radium, but from the pressure of the growth on the lid. I have never found it necessary to cut off a growth since we have been using radium. The radium causes such a quick disappearance of the hard masses, that even in the severe types three or four applications will suffice to clear up the condition. As Dr. Posey says, however, the conjunctiva is not normal after these treatments; there will be a certain amount of atrophy of the membrane as in the late stages of trachoma.

For the milder types we have always used a solution of adrenalin with a boric acid solution and find that sufficient. This year we have had a great deal of satisfaction with a preparation made by Schieffelin & Company, in New York, upon which the American Medical Association has not yet placed its sanction, and that is estivin, which Schieffelin & Company say contains a special extract of rosa gallica. This is particularly valuable in hay fever, they claim. In my experience it has no effect on hay fever, but it has a remarkable effect in early types of congestion of the eye which are associated with the appearance of grains such as timothy in the country, and in the congestion and uncomfortable itching which occurs in types of vernal catarrh it acts very favorably.

DR. HENRY K. PANCOAST (Philadelphia, Pa.): To us the most important point in connection with a case at the beginning is the diagnosis. Personally, I am not competent to make a diagnosis of vernal catarrh in all cases. I have known of at least one case being diagnosed trachoma by one ophthalmologist, by another vernal catarrh, and sent to me for treatment. It was treated for vernal catarrh, but if the condition was trachoma the treatment might succeed, though more radiation is necessary. In our early cases inexperience might have resulted in lack of care in not keeping the radiation distributed evenly over the lid. This is especially difficult with children who are struggling. The entire lid wherever involved should be treated evenly. The applicator should never be held in one place unless it is a special one made of the same size and shape as the lid.

It is practically impossible to assure the patient that the lashes will not come out following treatment. We all know that hair follicles are extremely susceptible to radiation. Even erythema doses will cause falling of hair anywhere, and in case of the eyelid the follicles are extremely close to the surface and the radiation must reach them. After our first experience we have always told the patient that the lashes are likely to fall out but in our experience they usually grow back. The two cases that have been mentioned here are the only ones I know of in which the lashes have not returned.

It is very important not to persist in the treatment too long, because of the certainty of scarring of the lids, which is undesirable. If we do not get the result we desire within a reasonable time and with a few applications, we would rather stop than to treat the case further.

We always prefer to treat patients during the cold season in order that the reaction, which is unavoidable because of the nature of the treatment, may not add to the discomfort of the patient during the season of activity. The principle of radiation treatment requires a reaction and if we get no reaction we get no result.

The treatment of the bulbar conjunctiva is something that I always go about with a great deal of fear and trepidation, because the reaction in the eyeball, even though it may be slight, causes a great deal of discomfort to the patient and one never knows how severe that reaction will be. We never would give the same dose over the eyeball that we would over the lid. The dosage which Dr. Jackson has given you is practically the same as is used by everyone, whether it be expressed in terms of millicurie hours or milligram hours. The whole secret is the use of the beta radiation with very little filtration in order that you may not get too much penetration over a very thin structure.

DR. POSEY (in closing): It is a great source of satisfaction to hear from these three gentlemen that the results from radium are so favorable.

There is no doubt that the failure to recognize this condition has been widespread. Twenty years ago, when I sent my letter to 500 ophthalmologists all over the country asking them how many cases they had seen, I remember the Professor of Ophthalmology in a well-known medical college sent back word that vernal conjunctivitis was very common in his region, and that they saw hundreds of cases in the spring of every year, he of course mistaking vernal conjunctivitis for acute catarrhal conjunctivitis.

THE DIAGNOSIS AND TREATMENT OF CHRONIC OR LATENT TONSILLITIS*

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Chronic or latent tonsillitis frequently occurs in association with chronic infection of the roots of devitalized teeth, pyorrhea, or sinusitis. Although acute tonsillitis occurs more frequently in the young, the systemic manifestations of chronic or latent tonsillar infection are more usually observed at or after middle age.

Chronic or latent tonsillitis may exist twenty or more years and may, for certain periods, be absolutely local, with no systemic manifestation. Frequently these periods are not truly local, but are latent as toxins or microörganisms are entering the blood without producing diagnostic symptoms. These periods of latency alternate with periods of obvious systemic infection.

Latent tonsillar infection is very apt to become active when any intercurrent infection or disease occurs, such as influenza, typhoid fever, pneumonia, diabetes, cardiac or renal decompensation, or any condition that lowers the defense system of the body, such as malnutrition. Perhaps the commonest of all causes are intercurrent infection malnutrition or old age.

The tonsils may be considerably or moderately hypertrophied, small in size or buried. The anterior and posterior pillars are frequently adherent to the tonsil, and the anterior surface of the anterior pillars often presents a dark red, congested appearance.

When infected tonsils are subjected to pressure, some yield *no* secretions, others show a cheesy or thin milk-like fluid which, when cultured, usually reveals the streptococcus hemolyticus or viridans. The crypts are frequently dilated, and when emptied, and material secured from the bottom by a platinum loop is cultured, the streptococcus hemolyticus or viridans may be obtained in pure culture. Similar organisms may be obtained from the surface of the tonsils, and from the bottom of the spaces between the tonsils and the anterior and the posterior pillars. The pathogenicity and specificity of these organisms may be determined by animal experimentation.

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The blood serum on examination may show varying degrees of immunity or susceptibility to the infective organism.

Hemolytic streptococci have been found in the enlarged lingual tonsils and in diseased glands in the posterior wall of the pharynx.

A negative culture may be due to the closure of crypts by adhesive inflammation, or because the infection is due to a circumscribed intra- or retro-tonsillar abscess.

The small, buried, fibrotic tonsil may give no evidence of infection, and the diagnosis of its infectivity may rest entirely upon the exclusion of all other foci of infection together with the clinical and leucocytic manifestations of systemic infection. Occasionally the *only* diagnostic sign is lymphocytosis, polymorphonuclear decrease and leukopenia.

Infected tonsillar tissue remaining after a tonsillectomy, even though no larger than a split pea, or unremoved infected glandular tissue in the region of the plica triangularis, may produce the same clinical manifestations as an infected tonsil.

Usually, chronic or latent tonsillar infection is preceded by a history of one or more attacks of acute tonsillitis, although occasionally no such history is obtainable, either because the infection was chronic from the beginning or because of forgetfulness on the part of the patient.

When the tonsil is infected by contiguity from pyorrhea around the third lower molar, or from sinusitis, the patient may suffer no attack of acute tonsillitis. Whenever possible, tonsillectomy should be performed after the removal of pyorrhea, periapical dental infection or sinusitis.

As a rule, when recurrent acute tonsillitis has occurred, even though twenty years have elapsed since the last attack, the tonsils should be suspected of being infected until proved innocent.

The presence of enlarged, indurated and painless cervical glands aids in diagnosing chronic or latent tonsillar infection, but they may be so situated as not to be detected by palpation.

The most common clinical manifestations of chronic or latent tonsillar infection, more or less in the order of freqency are: arthritis, periostitis, tenosynovitis, myostitis, chronic myocarditis, endo- or pericarditis, endarteritis, neurasthenia, psychoneurasthenia, psychoses, neuritis, cholecystitis, cholelithiasis, hepatitis, hepatic insufficiency, intestinal toxemia, nephritis, pyelonephritis, renal calculus, peptic ulcer, and infective processes involving the eye, ear, skin, respiratory or genital organs.

When a vital organ is involved, such as the heart or kidneys, and reasonable clinical evidence exists that it is infective in origin, more especially if the polymorphonuclear cells are decreased, with lymphocytosis and leucopenia, and no other focus of infection is discoverable, the tonsils may be removed on suspicion. A pathological and bacteriological examination of the excised tonsils will establish the correctness or incorrectness of the procedure.

In more than one-half of the cases of chronic tonsillar infection, there is a well marked increase of the small lymphocytes, a corresponding decrease in the polymorphonuclear cells and, a decrease in the number of leucocytes per c.mm. Anemia or chloroanemia usually coexists. This diagnostic leucocytic picture may be the chief or only evidence of chronic or latent tonsillar infection and indicates that toxins or microörganisms or both are entering the blood. If this diagnostic blood picture permanently disappears after tonsillectomy, it proves that all infection has been removed; if, however, it returns after a temporary absence, it proves that a focus of infection still exists.

The following is an abstract of a typical case of chronic tonsillar infection, illustrating the difficulty of diagnosis:

> Maiden lady, aged 70, weight 81 pounds; marked asthenia, chloroanemia, relieved by removal of dental foci of infection. A few months later, symptoms recurred. Tonsils small, buried and almost invisible, and a laryngologist stated they were normal. No history of a previous disease of the tonsils. As the differential leucocyte count showed lymphocytosis, a moderate polymorphonuclear decrease and leucopenia, infection was believed to be present, and as no other focus of infection could be discovered, the tonsils were removed on suspicion, and showed pathological changes and hemolytic streptococci. The patient's recovery was due solely to the recognition of the diagnostic importance of lymphocytosis, polymorphonuclear decrease and leucopenia.*

The treatment of chronic tonsillar infection, or of an infected remnant, is its complete surgical removal.

When infected tonsils are inoperable, the septa of the crypts may be divided so as to favor drainage. Any antiseptic, such as iodin, or Dakin's solution, may be employed to irrigate the crypts after they have been thoroughly emptied by compressed air or liquid. The x-ray properly applied, in proper doses, at proper intervals, sometimes causes a reduction in the size of the diseased tonsils and may reduce infectivity, and should be employed in conjunction with local treatment.

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*Lymphocytosis as a Diagnostic Sign of Chronic Periapical Dental Infection in Adults.—Journal of the American Medical Asso., Oct. 22, 1921, Page 1308.

A properly made autogenous vaccine is of value in the senile, the debilitated, and those in whom resistance is lowered from any cause. In healthy, young adults, with no complications, vaccines are usually unnecessary.

Summary of the diagnostic evidence of tonsillar infection, in the order of importance:

1. The appearance of the diseased tonsils; adhesion of the pillars to the tonsils. Dark red, congested appearance of the anterior face of the anterior pillars.
2. A thin milk-like secretion obtained from the tonsils by expression, containing pathogenic organisms, often in pure culture, usually the streptococcus hemolyticus or viridans.
3. Pathogenic organisms, usually the streptococcus hemolyticus or viridans, especially when secured from the bottom of the spaces between the tonsils and the anterior and posterior pillars, or from the bottom of a crypt.
4. Clinical evidences of infection.
5. Lymphocytosis, polymorphonuclear decrease, leucopenia, usually in association with anemia.
6. History of recurring tonsillitis or tonsillotomy.
7. Enlarged cervical glands.

DISCUSSION

Dr. John A. Lichty (Pittsburgh, Pa.): When I look into a mouth in the course of a general examination and see an hypertrophied tonsil, or one in which I think I see infection, I send that patient to the nose and throat man with only one question, and that is, "Are those tonsils diseased?" I do not want him to tell me whether he thinks they have any relation to a pain in the knee, to a headache, or to any other symptom. If he assures me that the tonsils are diseased and I am convinced of it, then I say the tonsils must come out, providing the operation is a safe one. We are beginning to take tonsils out in the elderly individual, and it is quite an undertaking to do that. It is difficult to decide, even if the tonsils are diseased, whether the removal of the tonsil will benefit the patient and whether the patient will undergo the operation safely. If this cannot be answered with any degree of assurance we must let them alone.

But if the tonsils are taken out, one must not expect that every symptom the patient has complained of will disappear. But one is on safe ground so far, and if the patient gets better, well and good; if he does not, it may at least bring about conditions that will prevent other infections which might have occurred if the tonsils had been let alone.

Dr. William Egbert Robertson (Philadelphia, Pa.): I feel with Dr. Lichty that it is a matter of great difficulty to decide as to what should be done relative to the removal of tonsils, and sometimes as to whether any material benefit has been derived after the tonsils have been removed. Perhaps the question is best approached from two phases—that of childhood, and that from the period of early adult life on.

During childhood and adolescence one has the acute tonsil to deal with, and two points in this connection should be stressed. One is the relation of the infected tonsil to some other disease entity, such as diabetes, for an attack of tonsillitis may cause the rapid flare-up of a hitherto mild case. Another thing is that an apparently mild attack of tonsillitis may be followed by severe and prolonged illness in a child, such as endocarditis or pericarditis. These latter conditions one very rarely meets after adolescence. These possibilities often justify removal of tonsils not badly diseased but potentially dangerous.

Dr. Daland has elected to consider the tonsil from the chronic or latent standpoint, and it is just as true in later life that the tonsils may change diabetes from a mild to a severe type. But perhaps our greatest difficulty exists in those cases already diseased, with an established endocarditis and from time to time attacks of pain, to which it is difficult to determine just what relationship the tonsils bear. Or the tonsils may have been removed, and then a still greater difficulty presents. I have in mind two instances, both of aortic disease. Both individuals had the tonsils removed, both were subject to pain of a character not definitely rheumatic, but they had pain in the joints and muscles. There was very little tonsillar tissue to be seen, but it seemed justifiable to make an attempt to remove what tissue was present after the previous tonsillectomy had been done. In both of these cases the removal of mere stumps of the tonsils, that did not seem to be diseased, resulted in complete recovery so far as pain was concerned. No other focus of infection was found and therefore in these cases we concluded that there was a direct relationship between these stumps and the pain.

In discussing the clinical and bacteriological aspects of disease of the tonsils, it must not be overlooked that the more important phase is the clinical one. Most men in the smaller communities have not facilities for detailed bacteriologic study, and most men in metropolitan centers do not avail themselves of it. Blood cultures are frequently unsatisfactory and few men in general practice anywhere resort to blood culture study. The most important thing for the doctor to do is to retract the anterior pillar, expose the tonsil bed, and when cryptic, cheesy plugs are extruded, or when a rather thin, dirty, greyish exudate escapes, such fluid will usually be found to contain streptococci. All such infected tonsils should be removed in children and young adults especially. No hard and fast rule can be drawn in the adult, and each case will have to be dealt with on its merits.

Dr. Myer Solis-Cohen (Philadelphia, Pa.): The relationship which Dr. Daland spoke of between the various organs and the infected tonsil can often be shown bacteriologically. Frequently I have obtained the same organism, both in the tonsil and in the appendix; in the urine of a pyelonephritis case and in the tonsil; in the duodenal washings of a cholecystitis case and in the tonsil.

Dr. Robertson has mentioned the difficulty of determining the bacteriologic relationship, and Dr. Daland thought the pathogenicity could be determined by animal experimentation; but the point we must decide is this: is the organism pathogenic for the individual? It is a fact that pathogenicity for the individual depends upon the immunological reaction of the individual. One person might have good bactericidal power against streptococcus viridans; another against staphylococcus pyogenes aureus. These organisms will not affect them. Merely making an ordinary culture will determine what organisms are present, but not whether they are pathogenic for the individual. But there is a simple way of determining this. In addition to making an ordinary culture, which allows all the organisms to grow, make a smear in the bottom of an empty sterile test tube. Taking two or three c.c. of blood from the patient's arm, you put them in this tube, which is put in the incubator. At the end of twenty-four hours a drop of this inoculated blood is plated. On the plate will grow the organisms that his blood cannot kill and which are pathogenic for him. In that way you can determine whether the organisms present in the tonsils are pathogenic for that individual or not.

We must remember that infections of the upper respiratory tract are not always connected with the tonsil. We have organisms in the tonsils, but a great many are in the rhinopharynx too. The removal of the tonsils with their contained organisms may cause an increase in the immunilogical powers of the patient so that in two or three months the infecting organisms will be killed in other parts of the body. But very often that does not occur. You take out the tonsils and the patient is no better. Why? In many cases, because in the rhinopharynx and in the tonsillar spaces the same infecting organisms are still growing and the patient's blood is not killing them.

Dr. Nelson S. Weinberger (Sayre, Pa.): I want to congratulate Dr. Daland on this paper on a very much abused question. There is a great deal being written to-day on the tonsils as foci of infection that has practically no value. Some of it is harmful.

Dr. Daland made the point that in looking for foci of infection, if after careful examination no focus exists, it is well to remove the tonsils on suspicion. That may seem a little radical to most of you, but I want to say that personally I heartily agree with him, for the reason that frequently where we do not find infection in the tonsils, their removal proves they were the cause of the trouble, because the patient becomes entirely well of the particular condition that existed. This is often seen in cases where a severe pyelonephritis had given the patient trouble over a period of years. We all know that normal tonsils are very rare, and realizing this, it is well, as Dr. Daland said, to regard the tonsil as guilty until proved innocent.

Something was said about the age of the patient. We frequently hear it said that a patient is too old to have the tonsils removed. The tonsil operation to-day has arrived at a stage where tonsils can be removed safely if the patient is in condition to have any kind of minor operation. There are patients in whom a tonsil operation should not be considered a minor operation, patients with a pathologic condition of heart or kidneys, and yet in these cases it is well to remember that only by the removal of the tonsils can you cure your patient of this infection that has pulled him down over a long period of time.

Another point to remember is that often a small mass of adenoid tissue will be retained by adults even to old age. Cultures of this adenoid mass will often show us the presence of the same pathologic organism that was found in the tonsils, and unless it is removed no results will be obtained.

Dr. Seth A. Brumm (Philadelphia, Pa.): For some sixteen years I have attended medical conventions and have listened to discussions on the pathological tonsil, but it seems to me we occupied our time without any definite conclusions. The size of the tonsil has nothing to do with it, as some of the most virulent tonsils I have seen were not much larger than a split pea; while on the other hand, very large hyperplased tonsils had very little systemic influence. The tonsil that gives a history of frequent tonsillitis is not necessarily the most dangerous, as this type of patient very often acquires immunization, but the so-called quiescent tonsil from which under suction or compression we are able to express various types of pus is the one for which we have much consideration and fear.

These observations have led me to use as diagnostic signs the following conditions: If the arches, especially the anterior, show a deeply injected margin of a beefy redness, look out for streptococci. If this redness has more of the mackerel sky or blotchy appearance and extends back on the velum you are led to believe this is a staphylococcic invasion. In other words, the picture of the fossa or palate shows nothing more than a chronic lymphogitis. Finding this picture I do not deem it necessary to use suction or compression to make a diagnosis.

As to the age of a patient, the youngest person I have operated upon was nine months of age; the oldest, seventy years of age. So it seems to me we can disregard the problem of age.

To-day with improved technique and hospital supervision, I think the operation with local anesthesia can be carried out with far more safety than the removal of appendix or some gall-bladder condition.

Dr. S. Calvin Smith (Philadelphia, Pa.): I wish to thank the Chairman for calling upon me to close the general discussion, and I wish to thank Dr. Daland for the pleasure of hearing his views and methods concerning the diagnosis of tonsillar infectivity. Dr. Daland was a pioneer in developing the relation between infective foci and systemic disease. The paper crystallizes a rich experience. I could not help feeling that in the lessons of each meaty sentence lay the secret of relieving the misery of many of that class of patients who are neither sick enough to be in bed nor well enough to be up and around.

Speaking from the standpoint of one especially interested in heart conditions, I believe that infective tonsils lead the list of that large group of causes which produce heart affections, especially in patients under 45 years. After that age, dental infections are more likely to be the cause—although, of course, infectivity from any source is never limited to any age period.

Our advance in the present-day treatment of heart affections, as well as our hope for the future in the prevention and relief of heart disease, depends in a large measure upon the persistence with which we search for foci of infection.

I should like to ask Dr. Daland to give us his views concerning the secondary foci which arise elsewhere in the body as a result of primary tonsillar infectivity. Such a circumstance may account for the persistence of symptoms which is occasionally encountered after the tonsils have been removed.

Dr. Daland (in closing): Dr. Lichty brought out clearly that the diagnosis of tonsillar infection from his standpoint is to be made by the laryngologist. As a matter of fact, the diagnosis of tonsillar disease is to be made by the internist from the clinical standpoint, the laryngologist from the local standpoint, and the bacteriologist. In other words, it requires team work correctly to diagnose obscure tonsillar infections.

The prognosis of tonsillectomy in the aged and feeble is serious, and demands that the patient shall receive every safeguard possible. With modern operative methods, adapted to the needs of the patient, judicious care in the selection and administration of the anesthetic, and morphin and atrophin hypodermically twenty minutes prior to the operation, most of these patients recover.

An obese, debilitated woman, aged sixty-five, with advanced chronic myocarditis and fatty infiltration, died after a tonsillectomy, from a hemolyticus streptococcus pneumonia. If the operation had not been so prolonged, and if the patient had received preoperatively an autogenous vaccine, the chances for recovery would have been increased. In this case, if the tonsils had not been removed, in all probability, death would have followed in a few months.

I heartily agree that a patient is better off without diseased tonsils than with them. Symptoms due to diseased tonsils will disappear after tonsillectomy, and those that remain must then be treated.

The relationship of tonsillar infection to diabetes, referred to by Dr. Robertson, is likewise true of other diseases, as for example, syphilis and cirrhosis of the liver. An infected tonsillar remnant will produce the same effect as a diseased tonsil. It is not the size of the tonsil, but the pathogenicity, specificity and virulency of the microörganism, that is important.

I am glad that Dr. Cohen stressed the importance of the individual susceptibility or immunity. Immunity is not a contraindication to tonsillectomy.

Dr. Brumm pointed out the multiplicity of organisms in the neighborhood of the tonsil, as did Dr. Cohen. A skilful bacteriologist, however, can usually determine the dominant organism, which may be tested against the individual's own serum to determine susceptibility or immunity and from that organism make a vaccine. The therapeutic value of vaccines has been obscured by lack of accuracy in diagnosis, by lack of skill on the part of the makers of the vaccines, and by lack of skill in their administration.

As Dr. Smith has indicated, success in the prevention of cardiovascular disease largely rests upon the prompt detection and removal of foci of infection. A secondary focus of infection becomes primary when the primary focus has been removed, and behaves in precisely the same way as any primary focus of infection.

SELECTIONS

MENTAL HEALTH LEGISLATION*

WILLIAM C. SANDY, M.D.†

HARRISBURG, PA.

The preparation of mental health measures for presentation in the 1923 legislative session was undertaken by the Bureau of Mental Health after careful consideration of several factors. In the first place, there had to be a thorough understanding of the present resources or facilities of the Commonwealth for mental health, how adequate they are and how effectively they are being used. These facilities had to be further studied as to the possible desirability of changes in form or purpose and as to extensions that might seem to be indicated. Finally, there had to be a state-wide comprehensive plan for future development, all recommendations and enactments having a direct relationship to such a plan. In connection with it all, however, there had to be due regard to the financial resources of the Commonwealth, the necessity for "living within the income," and for this reason, if for no other, the comprehensive plan had to entail the utilization to the utmost possible extent of the existing resources of the state.

At the very onset, therefore, the Commonwealth was fortunate in having the findings of extensive surveys of the institutions for mental patients made in 1914 and 1916. These surveys were supplemented by a similar one made in 1922 by the Director of the Bureau of Mental Health who had also conducted that of 1916. Besides the survey reports, there has also been available the report of the commission, appointed by Governor Sproul in April 1920, to revise and codify the laws relating to the insane, mental defectives and inebriates, together with its excellent comprehensive plan, general recommendations and drafted bill. Many valuable suggestions, furthermore, have been obtained in response to a circular letter sent out in the early part of 1922, addressed to physicians and others interested in the care and treatment of mental patients. The latter, together with the already mentioned report of the special commission were largely made the basis for the proposed legislative program.

It is not necessary at this time to enter into a detailed discussion of the several surveys. It is sufficient to say that conditions were found last year to be essentially as they were in 1914 and 1916. In general they may be summarized as follows: First, there is a wide variation in the facilities provided and the methods of care and treatment of mental patients throughout the Commonwealth.

Again, the institutional accommodations for all types of mental patients are very inadequate. The hospitals are greatly overcrowded. The institutions for mental defectives are filled to capacity and there are long waiting lists. There are practically no special accommodations for epileptics, aside from two small private institutions.

Furthermore, the laws relating to the several types of mental patients, especially in reference to the different institutions, were found to be scattered, varied in details and lacking in a number of modern features considered highly essential.

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*Read at a meeting of the Association of Trustees and Medical Superintendents of the Pennsylvania State and Incorporated Hospitals for Mental Disease and Defectives at the Dixmont Hospital, October 4, 1923.

† Director, Bureau of Mental Health, Department of Welfare, Commonwealth of Pennsylvania.

Finally, the continued use of antiquated and undesirable terms such as "lunatic," "asylum," "insane," has resulted in the preservation of old time prejudices and faulty conceptions about mental disorder.

Time will not permit a detailed discussion of the principles involved in or the arguments for and against the comprehensive plans of the Bureau of Mental Health, important and interesting as this would be. It will be possible in this paper only to outline the legislation proposed during the last session, with special reference to that which was finally successful.

In the proposed legislation, there were three main objectives in view; first, the increase of institutional accommodations for all types of mental patients; second, elevation of standards of care and treatment; third, modernization of nomenclature and procedure.

The period of economy necessitated by the state's present financial condition has resulted not only in a temporary cessation of much needed institutional extension but also in the present sentiment against any plan which would obligate the Commonwealth to a considerable degree in the future. Consequently, little could be accomplished at the past legislative session in the way of providing greater institutional accommodations. For instance, it was impossible to have considered a separate colony institution for epileptics although it was generally recognized as desirable and there are at least two tracts of state owned land which might be made available for such purpose. These same conditions at least partially account for the lack of success of the legislation for the establishment of the principle of complete state care of mental patients, which plan would also have resulted in increased accommodations for all types of cases and higher standards of care and treatment. The act in question would have gradually brought about complete state care within a period of ten years, certain county hospitals being acquired by the state by mutual agreement and adequate compensation, while other county institutions would have been licensed for the care of purely custodial cases of mental deficiency. This act failed to pass beyond first reading.

Some ten so-called "change of name" bills by which the titles of various institutions for mental patients were modernized and shortened, usually making official the localizing names by which many institutions have already been known, passed both branches of the legislature but with one exception, were vetoed. This was considered necessary as the appropriations had been made under the old names and it was feared the new names would create some confusion. Notwithstanding the ultimate failure of the "change of name" bills, however, the principle has been established, the new names are used in both the "Code" and the "Mental Health Act," and they are to be officially adopted, the old name being continued for the time being in fine print below.

The "Administrative Code," of general application to departments and institutions of all types, is important from the standpoint of the institutions for mental patients in that certain fundamental principles are by it firmly established. For instance, double- or triple-headed organization of institutions is no longer possible. A superintendent is specified to be appointed by a board of trustees, which delegates to the superintendent as the chief executive officer, the authority and responsibility of conducting the institution in all its departments. The powers and duties of the trustees and superintendents and the various departments are outlined in general.

The most outstanding accomplishment, from a legislative standpoint, was the passage of the "Mental Health Act" which was signed on July 11, 1923. The "Mental Health Act" was largely based upon the recommendations of the already mentioned special commission of 1920 and the suggestions obtained in response to the circular letter addressed to physicians and others interested in mental patients.

Briefly stated, the "Mental Health Act" is a codification and it modernizes and corrects certain defects in the law relating to the mentally ill, mentally deficient, epileptics and inebriates. Up to this time, hospitals for mental patients and institutions for mental defectives have operated more or less under separate acts, causing confusion at times and lack of standardization. Existing laws are recast into such a form as to make a consistent whole. Only such changes and additions have been made as experience has proved practicable or which are logical developments of present practice.

Except where criminal law is involved, the terms "mental illness" and "mental diseases" replace "lunacy," "insanity" and "unsoundness of mind," in accordance with modern usage; also "mental defective" replaces "idiot," "imbecile" and "feeble-minded."

Licensing and supervisory power is extended to include all places where any kind of mental patient is received for remuneration.

Voluntary admission of insane is extended from 30 days with privilege of renewal, to the period of a year during which the patient may remain voluntarily or until within that time he writes a request for discharge. It is also extended to include epileptics and inebriates and indigent patients.

Admission on request of friends and sworn certificate of two physicians is retained. Commitment by court order on report of commission is retained, but it is required that two qualified physicians be on the commission. Commitment by court order on sworn certificate of two physicians is added.

A qualified physician is one who has had three years' practice or one year's experience in an institution for mental patients.

Admission for temporary care is added, on application to superintendent and certificate of one licensed physician, permitting immediate admission for 10 days during which time all necessary legal requirements for prolonged care may be fulfilled.

An emergency commitment is added, giving legal sanction for the use of force by police or other civil officer in apprehending and delivering to a hospital a violent or dangerous patient on the certificate of two qualified physicians and the request of a responsible friend or one of the physicians. Within 10 days the patient must be discharged or a request made for a court order for his commitment.

Commitment for observation is also added, where mental disease is suspected but not certain, on certificate of two qualified physicians and order of court specifying length of time, e. g., usually 30 days. The superintendent of the hospital must make written report of the patient's condition to the court before the time expires.

The three state institutions for mental defectives have had different methods of admission. Each method has been made applicable to all institutions or places for mental defectives.

Epileptics, dangerous to themselves or others may be admitted, by order of a court, to a hospital for mental diseases in the same manner as the mentally ill.

Parole or leave of absence from mental hospitals is allowed, not to exceed one year—an extension of the present sixty-day leave.

Authority to transfer insane patients is extended to include all types of mental patients except those under sentence by court for criminal offences or acquitted on grounds of insanity.

The right to discharge mental patients is given to trustees or superintendent, if no harm will result, except in case of convicts, those acquitted on grounds of insanity and mental defectives and inebriates committed by the court, in which cases a court order is required. Patients absent more than a year are to be automatically discharged. Other provisions in this respect remain essentially as heretofore.

Provisions are made for interstate negotiations for return of escaped patients.

The method of maintenance of mental patients remains as in the past except that no distinction is made between the voluntary patients and those admitted by other procedure, nor between epileptics, inebriates and other mental patients.

It is made a misdemeanor to aid any patient to escape or to supply alcohol or narcotics to any patient without permission of the physician in charge.

Such acts as are inconsistent or superseded by the "Mental Health Act" are repealed.

Undesirable features may come to light in the practical application of this act and the Bureau of Mental Health will appreciate constructive criticism. New forms are being devised in accordance with the various provisions and when printed will be furnished for distribution by the Department of Welfare.

The question of appropriations, methods of distribution of funds, and so on, are too involved for the present discussion. While the bill was passed and signed which authorizes a six dollar per capita rate, yet the financial situation makes considerably less available for actual use.

It is felt, however, that by strict economy the institutions can, as a rule, carry on without seriously lessening the general efficiency or greatly lowering the standards of treatment of patients. Under such circumstances, institutional extension being largely at a standstill, all activities for prevention, community and social service, and the rehabilitation of mental patients are particularly important.

In conclusion, it is hoped that the mental health program may continue to merit the active support of those without whose help little would have been accomplished in the way of successful legislation.

PITTSBURGH ACADEMY OF MEDICINE

ABSTRACTS

REPORT OF CASE OF UNUSUAL BLOOD TUMOR OF THIGH

W. A. DEARTH, M.D.

W. S., male, age 63, admitted to the Allegheny General Hospital September 10, 1923.

History of Present Illness: About twenty years ago patient noticed a small lump, about the size of a walnut, below the left iliac crest. He consulted a physician at that time, who advised him not to have it removed unless it gave him trouble. About three years ago it began to enlarge, and in the six months previous to admission it grew very rapidly. It has never given him any pain, only a feeling of weight. It interfered with his walking and he was unable to sit in a chair comfortably. In fact, the great size was his chief complaint, his trousers being of sixty-two inch waist measure.

Physical Examination showed on the left thigh a large tumor mass extending from the crest of the ilium to the middle of the left thigh on its lateral aspect. The skin over this tumor was very thin, bronzed and adherent to the underlying mass. The tumor mass was loculated, some portions being very firm while other parts were soft, almost cystic. The mass was firmly fixed when the leg was extended but freely movable when the leg was flexed. There was no enlargement of the inguinal glands. Blood picture—R. B. C. 4,600,000, W. B. C. 8,000, hgb. 80%, large lymphocytes 4%, small lymphocytes 7%, large mononuclears 3%, eosinophiles 2%, transitionals 2%, polymorphonuclear leukocytes 81%, unclassified 1%. The urine was negative.

Operative Procedure: A long eliptical incision was made, extending from the lower margin of the ribs to the lower third of the thigh directly over the tumor mass. The skin, as noted, was found very adherent and thin over the tumor. It was dissected back on each side and as the base of the tumor was approached, subcutaneous fat appeared. The skin flaps being reflected completely to each side, the tumor mass was dissected from below upward, cutting through the fascia lata anteriorly and through the gluteus maximus muscle posteriorly. The growth had a very firm fibrous attachment to the great trochanter and along the entire crest of the ilium. The blood vessels supplying the tumor were small in size and were few in number. Very little blood was lost during the operation, all bleeding points being carefully ligated. The skin edges were approximated with interrupted silkworm-gut suture. A small rubber drain was introduced through a stab wound anterior to line of incision.

The Pathological Report of the specimen (Dr. Goodpasture) was as follows: Macroscopic description—Specimen consists of a huge mass covered on one side with skin, on the other by muscle and fatty tissue. On section, a chocolate colored fluid of a consistency about like melted chocolate ice cream spurted out. About three liters of this were removed. On further incision, several cavities were opened; the largest contained the chocolate fluid. Its inner wall was lined by a fairly smooth but irregular chocolate colored membrane, in places covered by firm red or brown fibrinous clots, firmly adherent. Other smaller cavities contained dark purple blood clots and firm red fibrinous masses; others a lighter brown thick chocolate fluid, others opaque yellow friable material like dense fibrin. One cyst, 2 cm. in diameter, not attached to the other, contained sebaceous material, yellow and glistening. The walls of all of these spaces were thin and circumscribed, surrounded by a fibrinous capsule. No masses of living tissue were seen. Within the cyst containing most recent clots were dome-like soft clots apparently lined by thin endothelial membrane attached to the cyst wall.

Microscopic Description: Sections showed that the hematoma was surrounded by a dense hyalin fibrous wall pierced by not very numerous small blood vessels. The interior lining showed numerous capillaries, blood spaces and fibroblasts gradually organizing masses of fibrin. There was considerable blood pigment in the wall. In no place was there tissue resembling a tumor. Sections through the cyst-like cavity filled with fatty material showed a thin fibrous capsule lined on the inside by foreign body giant cells containing clefts of fatty crystals. The contents of hematomas were fibrin and blood clot in various stages of disintegration.

Diagnosis: Hematoma of unknown etiology. Weight of tumor was twenty-two and one-half pounds.

REPORT OF A CASE OF CONGENITAL ATRESIAN OF ILEUM

W. A. DEARTH, M.D.

Baby was delivered at term 6:55 a. m., July 20, 1923; mother in labor six hours. At birth child cried vigorously and appeared normal; weighed seven pounds six ounces. Nursed well and had first and second feedings, at one and six forty-five p. m. No regurgitation and no stools. Voided normal amount. Temperature and pulse and respiration normal. Fourteen hours after birth regurgitated a small amount of greenish material with mucus. Twenty-four hours after delivery baby's face appeared pinched, skin wrinkled and peeling over wide areas. At 9 a. m. baby did not nurse so willingly. No regurgitation of breast feeding. Supplementary feeding of lactose, half ounce every six hours, was given after each breast feeding because of dehydration. First projectile vomiting of greenish material with brown streaks and mucus occurred at 9:30 a. m., twenty-six hours after birth. At 10 a. m. vomitus was browner with very little greenish material present. At

12 a. m. a towel placed about the child's head contained large amount of foul brown material. Temperature by rectum 99.6. Baby whined almost continuously. At 3 p. m. patient seemed much brighter, nursed fairly well at breast but regurgitated subsequent lactose feeding. In about an hour vomited foul dark brown material. At 4:30 p. m. attending physician ordered simple enema of warm water followed by one dram of castor oil. Rectal tube inserted three inches but water would not flow. Tube removed, reinserted and small amount of gas was expelled. On third attempt a small amount of mucus was passed. A fourth insertion brought away two hard round yellowish plugs of mucus measuring about four inches. No meconium passed. Baby seemed relieved after the irrigation and slept for 1½ hours, but woke up vomiting. Temperature at this time was 102.6. Another enema was given without results. Forty-three hours after birth child was vomiting everything given by mouth. This continued up to the time of consultation, 52 hours after birth.

Physical examination at this time showed baby with pinched expression, very restless, crying, entire abdomen distended, visible peristatic waves in lower abdomen. Digital examination of rectum revealed no obstruction. Diagnosis of intestinal obstruction in lower bowel due to congenital defect was made and operation advised.

Under ether anesthesia the abdomen was opened; lower left rectus incision. Small bowel was distended, with marked tendency to protrude. The lower ileum was greatly hypertrophied and, with diameter of about 3 cm., was found to end blindly about twelve inches from ileocecal valve. The ileum between the cecum and the obstruction was firm, contracted and about the size of a goose quill. A fibrous cord extended from the dilated hypertrophied ileum to the distal contracted bowel.

The obstructed end of ileum was brought through incision, sutured to peritoneum and enterostomy performed, with catheter inserted for drainage. Following operation, baby vomited dark brown mucoid fluid. Two hours after operation was resting quietly. A large amount of thick, semi-solid brown material was draining through enterostomy tube. Hypodermoclysis of 300 c.c. of 2% dextrose was given. Died 11:15 p. m., approximately twelve hours after operation.

Postmortem Examination (by Dr. Goodpasture) showed the abdominal wound was attached to the lower portion of ileum where an enterostomy had been performed and a rubber catheter drain inserted into the ileum above. The wound appeared clean. Following down the small intestine from the duodenum, the ileum gradually became larger until it assumed relatively enormous proportions at the site of enterostomy, measuring 2½ cm. in diameter. The enlargement included not only a dilated lumen but a greatly thickened mucosa and muscular wall as well. This point was about 30 cm. above the ileocecal valve. The lower extremity of iliac enlargement was abruptly and completely obstructed. It was joined to the lower segment of ileum by a thin imperforate fibrous cord 1½ mm. in diameter. The ileum beyond was quite small, measuring 4 mm. in diameter. The entire large bowel was also small, empty and contracted, measuring 6 mm. in diameter.

The other abdominal organs, so far as could be noted, appeared normal.

Microscopic: Several sections from ileum showed a normal histology. The mucosa was intact and showed the usual arrangement. The stroma showed many chronic inflammatory cells, including some eosinophiles and plasma cells. This reaction, however, could not be traced into the muscularis. The subserosa seemed to be normal.

The symptoms depend somewhat on the site of the stenosis or atresia. Probably the first symptoms noted will be a lack of meconium, and mucus or mucus casts may be passed. Then the baby will vomit soon after nursing. The time and character of the vomitus depends on the site of the obstruction. If the atresia is in the duodenum above the entrance of the common bile duct there will be no regurgitation of bile or meconium. These are the most favorable cases for operation and a gastrojejunostomy is indicated. Visible paristalisis is usually evident, especially if the obstruction is low in the intestinal tract. The upper abdomen will be distended if obstruction is low in the intestinal tract. The picture soon becomes that of an acute mechanical ileus with loss of weight, anuria, rapid pulse, collapse and death in from three to seven days.

Treatment: Operation as early as possible offers the only chance for patient's life, and while the mortality rate is exceedingly high, an occasional case will recover. The most favorable cases are those where the stenosis is not complete, or if complete the occlusion is above the entrance of common bile duct, and those where the atresia occurs in the large bowel.

The operation of choice is the restoration of the intestinal tract where possible, but in the majority of cases the distal segment of bowel is so small from lack of development that a palliative enterostomy is indicated.

REPORT OF A CASE OF HYDRONEPHROSIS OF KIDNEYS WITH A COMMON PELVIS

W. A. DEARTH, M.D.

Patient admitted to Allegheny General Hospital, service of Dr. Theodore Elterich, October 30, 1923.

Previous History: Patient was a breech presentation, noninstrumental delivery, September 18, 1922. Breast fed until September 15, 1923. Mother stated that baby had always had enlarged abdomen but thought it had increased in size during the past month. Vomited watery material occasionally but did not vomit feeding. At birth weighed 6½ pounds; now weighed 14 pounds. No urinary symptoms.

Examination showed a fairly well nourished baby with enlarged abdomen and prominent superficial epigastric veins. It seemed to be slightly movable. Its wall was smooth and tense. Digital examination of the rectum was negative.

Operation November 3, 1923: Right rectus incision. On opening the peritoneum there appeared a cystic tumor, filling the abdomen from two inches above the umbilicus to pelvic brim, covered by mesentery of large bowel. To the outer side of the tumor were the ascending and descending colon. The transverse colon and small intestines were in the epigastrium above tumor. Urinary bladder was of normal size and independent of tumor.

The posterior parietal peritoneum and mesentery of the colon over tumor were carefully opened, and by means of an aspirating syringe, 1,000 c.c. of slightly turbid, amber-colored fluid was removed. The cystic tumor was then opened and found to be a dilated and hypertrophied common pelvis of two normally placed kidneys with greatly dilated calyses. The cortex of kidneys well flattened out, especially, the left kidney. Ureters not identified. The greater part of the cyst wall was resected, the edges closed with triple layer of sutures. Retroperitoneal drainage through counter opening in the right flank was inserted. Posterior parietal peritoneum and mesentery were closed. Anterior parietal peritoneum and abdominal wound sutured. Patient reacted very well from the operation. Patient has taken nourishment regularly—sleeps well. Temperature and pulse approaching normal ten days after operation.

Frederick B. Utley, M.D., Secretary.

COMMUNICATION

BIRTH CONTROL ONCE MORE

To the Editor of The Atlantic Medical Journal:

In the Journal for December, 1923, p. 172, there was an initial-signed editorial in favor of birth control as advocated by Mrs. Sanger. The chief objection to the assertions made in that article is that they have been refuted innumerable times. Apart from any notion of morality, the cure proposed for the evils described and imagined is not a cure, as I showed in the third edition of my book on "The Ethics of Medical Homicide and Mutilation." For example, the writer in the Journal said: "Holland claims more rapid increase in population, marked lessening of infant mortality, a noteworthy increase of physical efficiency and longevity, a diminution of illiteracy, vagrancy, etc., after forty years of legalized birth control."

Advocates of birth control say that Holland has had a Neo-Malthusian League openly operative since 1881, with fifty-two clinics where contraceptive information is publicly given. As a direct consequence and solely from the work of this league, Holland has had a dropping death-rate and an increase in population, and "even the stature of the Dutch has increased four inches since 1881." Before the late war every civilized nation had a dropping death-rate and an increase of population except France, where birth control worked against the increase made by the progress of preventive medicine. France, taught by bitter experience, is now offering prizes to families which do not practice birth control.

The assertion about the fifty-two clinics was carefully investigated. An army officer sent out by the committee searched fourteen days before he could find even one secret birth control propaganda station. At that time de Beerenbrouk was prime minister of Holland, and he said "if he caught any one spreading birth control in Holland during his administration he would see that this criminal got a long term in jail."

There was really a Neo-Malthusian League with 6,704 members, since greatly decreased in number, in the northern provinces of Holland. As a matter of fact, just where this league exists, the birth-rate has decreased and the death-rate has increased, and where it did not exist the direct contrary is true. Of course "the increase of four inches in stature" is a bit of childish ignorance. A prime law in writing romance is to be plausible in assertion. Where there are no children through the practice of birth control there are no children to increase or maintain the population, but the New York man who invented the Dutch yarn said that in Holland, where there are few or no children born because of birth control, the population increases. All authorities on the statistics of population tell us it requires an average of four children to a family to keep the population even stationary. Having none or two children to a family and relying on immigration to preserve the nations, means political annihilation, as can be readily shown. In New York State in 1919 instead of the required four children to a family to keep the population even stationary there was one child to every ten families of the "native Americans." Hence New York is overrun with southern, eastern and southeastern European races which never have been civilized and never will be civilized.

Austin O'Malley, M.D.

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January, 1924

EDITORIALS

PHYSICAL EXAMINATION BLANK

Elsewhere in this Journal the reader will find a blank prepared by the Committee on Public Relations of the Medical Society of the State of Pennsylvania. After considerable discussion this blank was accepted by the Committee as being the most satisfactory of those presented for the use of the profession in making complete physical examinations of apparently well individuals.

The Committee has also requested The Atlantic Medical Journal to have these blanks printed and made into pads of 100 blanks each for sale at cost price.

We trust that the request of the Committee that these blanks be used for physical examination will be received by the profession in the spirit of coöperation so as to make the physical examination program a success.

COMPONENT COUNTY SOCIETIES FALL DOWN IN ATTENDANCE AT THE STATE SOCIETY MEETING

The writer was astounded to find that some—and it may be said many—county societies had only one, two, three, four, five or six members registered at the Pittsburgh Session, according to the official registration report as it appeared in the November issue of the Atlantic (page 89).

One	*Two*	*Three*
Adams	Susquehanna	Center
Carbon	Tioga	Delaware
Franklin	Columbia	McKean
Lebanon	Clinton	Cumberland
Snyder	Bucks	
Union	Bedford	
Wayne		

Four	*Five*	*Six*
Berks	Montour	Mifflin
Warren	Chester	Somerset
	Bradford	Lehigh
	Northumberland	
	Schuylkill	
	Luzerne	
	York	

What is the real reason for this poor showing? Can it be that the members of these county societies feel that they have nothing to learn by attending the State Society meetings? Are the scientific programs uninteresting? Are the meetings a bore to them? Have they lost all interest in the new problems and discoveries? Are they so self-centered that they have grown blasé?

You will have to answer these questions for yourselves? May the answer be that they have grown indifferent? It is to be hoped so! If so, the President, President-Elect, Trustees and District Censors should make an intensive drive on these county societies between now and the Reading meeting, and find out by personal contact with the officers and members of the societies why this poor showing at the State Society meetings. Start a drive for the Reading meeting that will bring results. Let the Journal publish letters from the members of these societies if they have any good reasons to present for their poor attendance and showing at the annual meetings. Rescue these counties from the slough of indifference before it is too late.

The Medical Society of the State of Pennsylvania has always stood for progress along medical lines, and let it everlastingly be to our credit to find out wherein the fault lies that we fail to interest the members of these county societies—and correct it. There were many other county societies which showed a low registration at Pittsburgh and that should have done better.

Officers and members of our State Society: "To the work"! See that the Reading meeting does not repeat the faults of the Pittsburgh Session in county registration. Columbus.

THE CHALLENGE OF THE PERIODIC HEALTH EXAMINATION

There is now in progress an energetic campaign of education directing the attention of the public to the value of an annual physical appraisal. This form of preventive medicine appeals with peculiar force to the laity and there can be no doubt that the efforts of the agencies which are carrying the health examination campaign to the public will meet with marked success. A favorable response by the public challenges the profession to be able and willing to make the examinations in such an efficient manner that the expected benefits may actually be secured. Acceptance of the challenge involves more than may be apparent at first thought; it demands some preparation, some knowledge of what others have learned by experience in this field, and above all it demands a change in viewpoint. Experience in the diagnosis and treatment of full blown, well advanced disease such as the practitioner usually meets, does not equip him to make an accurate physical appraisal of an apparently healthy individual. If without much thought or preparation he makes such appraisals he is apt to conclude that there is little to correct in any of the examinees and he will place small confidence in periodic examinations as a factor in improving health and prolonging life. This is because he has been looking for full-fledged diseases, something he can name, like nephritis, or myocarditis; but if he will alter his viewpoint he will begin to spot disease tendencies or precursors in the apparently healthy, such as overweight, infected teeth or tonsils, exposure to industrial poisons or faults in personal hygiene.

If *Doctor Average Practitioner* is to meet the challenge successfully he must have the coöperation of the entire profession just as the doughboy must have the assistance of all other arms of the service before he can advance. The medical school must give more instruction in the recognition of predisease conditions, such as precancerous lesions and those things which pave the way for infections or lead to tissue degenerations. Research, both clinical and laboratory, must evaluate the various factors which enter into personal hygiene, such as diet, exercise, coffee, tobacco and hours and conditions of work, and many of our commonly accepted but uncriticized beliefs must be tested by the rigid standards of the research worker. The medical statistician can give great assistance in the same field, having for a laboratory the wide world and for subjects the human race. Clinical medicine must be more alert in detecting the early symptoms of disease as suggested by Mackenzie or, better still, must learn to recognize the predisease conditions as Bloodgood has done in regard to cancer of the mouth. Medical societies must present more papers and clinics on early signs of disease, even though it involves a reduction in the number descriptive of diseases which interest by their extreme rarity or because their complicated advanced pathology presents a puzzle comparable to that of a chess game. And in order that the best current opinion of the profession may be available to the practitioner in concise and collected form, the medical book publisher must issue the books needed.

The medical war manuals compiled in the Surgeon-General's office suggest to us a "Health Examination Manual," which could be compiled by one of the organizations interested in the subject and which should contain concise instructions for conducting such examinations, defining the normal and the departures therefrom, telling what errors to look for in personal hygiene and what corrections to advise. A brief outline of such instructions is contained in the Army Medical Bulletin, received by Reserve officers, in the issue of November 15, 1922, in the directions for making the annual physical examinations of officers. For the section on focal infection in our proposed manual and as an example of the kind of thing we have in mind, a recent article by Daland suggests itself: "Focal Infection in Clinical Medicine," published in the Annals of Clinical Medicine for November, 1923.

The practitioner, having been properly prepared and assisted as suggested, will find as time goes on a great deal of pleasure and satisfaction in the work of making periodic examinations and he will gradually gather statistics which will strengthen his convictions as to their value in adding to the health span and work span. And the final proof that he does have such convictions will be that he himself is examined by a brother practitioner at least once yearly.

The work span of our profession is shorter than that of any other profession and shorter than most trades and business occupations, being bounded on the one side by a long period of preparation and on the other by the too early onset of the degenerative diseases. The only hope of adding to our period of good health and our work span lies in our being periodically appraised and informed of the corrections needed in our physical equipment or personal habits. For, like the rest of humanity, we fail to reach an old age "frosty but kindly," not because we are worn out but because we are "poisoned out, infected out, starved out or deficiencied out."

Elliott B. Edie.

A CLEARING-HOUSE FOR PHYSICIANS AND COMMUNITIES

In recognition of the general unequal distribution of physicians, President Frontz devoted his inaugural address at the Pittsburgh Session of the Medical Society of the State of Pennsylvania, to the "Medical Care of the Rural Population." Dr. Frontz has consistently advocated an effort on the part of the State Society to remedy the much-talked-of shortage of doctors in rural communities.

To this end it was decided at the last meeting of the Board of Trustees to open a monthly column in the Journal to free advertising of locations where doctors are needed or where there are good openings for doctors. The column will also be open to physicians who are desirous of information regarding openings, or who for any reason, wish to locate in a desirable community. This department is not to be confused with the classified advertisements, in which advertising for positions, sale of practice, and similar subjects should appear.

The new department is offered purely as a service, not only to the physicians of Pennsylvania and Delaware, but also to the public in need of medical attention. The office of the Executive Secretary and Editor will act as a clearing house for such information, which should be addressed to the Society at 230 State St., Harrisburg, Pa.

It is the hope of the officers of the Society that our readers will coöperate by sending us information which should appear in this department of the Journal, as well as by seeing that notice of the service we are trying to perform is published in the local papers all over the state. In this way we would secure the coöperation of the laity as well as of the profession, and very likely, vacancies of which our readers have no knowledge would be called to our attention by responsible lay people.

You will find the "Physicians and Communities Exchange on page XIV of this number of the Journal. Whether or not you need the service of the department now, give it your support, so that it may grow to supply the real need existing in the country.

THE MEDICAL OFFICERS' RESERVE CORPS

At the December meeting of the Board of Trustees of the Medical Society of the State of Pennsylvania a communication was read from Surgeon General Ireland, U. S. Army. The Board endorsed the plans of the Department, and to bring the letter to the attention of the component county societies, ordered its publication in the Journal.

No one save the most enthusiastic optimist can deny the possibility of our country again becoming engaged in a war even more terrible than the last. The human race has not progressed to the Utopian stage which would preclude such a catastrophy, and from a practical standpoint it is most necessary that, as far as possible, our nation should be prepared. This condition affects definitely our medical profession, for the hygiene and medical care of the enlisted man is of prime importance. Those of us who entered the service in 1917 can easily remember the confusion that then existed, the absence of any well defined plan of preparation of the citizen physician for his army duties, the waste of power in the hasty organization of a machine constructed with but little definite knowledge of the duties it might be called on to perform, and they also remember the almost herculean work performed by the few devoted spirits who could be spared for the task, to the end that from a sanitary point of view our armies did not "muddle through" but came across with credit.

It seems our patriotic duty as citizens to embrace every opportunity to prevent such a condition developing if our country is called upon to face in the field of war a powerful army. Surgeon-General Ireland's plan is but a part of a broad scheme covering under act of Congress the development of a skeleton army, officered by men who, if not thoroughly trained, at least have a general understanding of their duties in an emergency. He calls upon us for our coöperation in furnishing our quota of such officers. The suggestion involves the development of liaison committees in each county, so that the Department can be brought into direct contact with the individual physician. These committees should be representative of the entire profession of the locality, in certain sections taking in the dental and veterinary professions as well. They should be composed of men at once interested and active and should definitely function. We are not asked to develop the Reserve Corps but to help develop channels by means of which our government can do that work. The Medical Societies are asked to initiate the development of these county committees, not at all as committees of local societies but as patriotic committees of professional men working under the Medical Department of the army.

T. B. A.

RADIATION TREATMENT OF CARCINOMA OF THE BREAST

Much has been accomplished in the treatment of cancer of the breast by the campaign of education of the public to lead them to consult a competent physician early, when any tumor develops. Much more can be accomplished if the general practitioner will continue this good work by carrying this message into the homes on his daily rounds. Much will be accomplished, too, if he will use his opportunity from time to time while making his general examinations to palpate the breasts and if nodules or a tumor are present, proper treatment should be instituted, or if in doubt, there should be a consultation with someone who has had a larger experience.

Many tumors of the breast are concealed or neglected because of fear of an operation. If it is made known that radiation can be used also to cure cancer, more patients will report early for examination. When practical, there should be a conference between the family physician, the radiologist and the surgeon. In this conference it must be borne in mind that as much skill and clinical judgment is needed by the radiologist as is needed by the surgeon, and the mere possession of an x-ray machine or of a quantity of radium is no more of a guarantee of skill than is the possession of a set of surgical instruments a guarantee of skill on the part of a surgeon.

All physicians have seen cases in which both primary and recurrent carcinoma have been made to disappear by radiation. We are not yet in a position to recommend radiation to replace surgery, but certainly we are justified in recommending a course of preoperative x-ray treatment which will only require a period of about two weeks, and which will serve to devitalize the carcinoma cells, and also, as has been shown by Murphy and his associates, it renders the soil unfavorable for the transplanting of carcinoma cells during the operation.

We are also justified in recommending postoperative treatment to prevent recurrence, for it is certainly reasonable to assume that since the rays will destroy the recurrences after they are palpable, that it should be much easier to destroy them when they are microscopic and when their own blood supply has not been established.

We are also justified in recommending radiation treatment when the patient refuses operation, for in a certain number of cases the disease can be made to disappear. We should also recommend radiation in the inoperable cases, for some of these can be gotten well, and some can be made operable. All can probably have their lives prolonged, providing the radiation is given with skill and clinical judgment.

Radiation can be recommended in doubtful cases, when operation is not decided upon, for in many cases of mastitis the disease can be made to disappear. It must be borne in mind, as has been shown by Speese, that 15% of the cases of mastitis are malignant, and Ewing has found malignancy in 50% of the cystic cases which have come to his attention. Therefore, if we can eliminate these cases, we have accomplished something. G. E. P.

THE PASSING OF DAKIN'S SOLUTION

Before our entrance into the World War the chemist Dakin, working with the surgeon Carrel, was successful in his search for a solution which was highly bactericidal and at the same time non-irritating to the living tissues.

Many of our physicians, after having worked in French hospitals, returned to this country bringing to us news of the wonderful results obtained by the proper use of this solution of sodium hypochlorite in almost hopeless cases of extensive wound infections, but at the same time warned us that the solution must needs be made most accurately and with painstaking precautions.

Carrel himself, shortly after our declaration of war, demonstrated the use of this bactericide at the hospital of the Rockefeller Institute.

Later, the use of Dakin's solution became general in our army hospitals and was finally employed more or less generally in the civilian hospitals of this country. If it was applied properly, by very slow irrigation, by the use of the small diameter perforated rubber "Dakin's tubes," imbedded in sterile gauze, and was titrated and accurately corrected as to its strength and reaction, the results obtained fully compensated for the time and trouble necessary to secure a proper solution, which requires a special laboratory and a trained technician.

In one army hospital, where the writer was in charge of such a laboratory, there were several hundred old chronic cases of empyema which followed measles, influenza or war wounds, and several hundred of extensive osteomyelitis resulting from war wounds. In the great majority of these cases the infecting organism was the hemolytic streptococcus, although some were due to other pyogenic organisms. Bacterial culture counts, by the poured blood-agar plate method, were made on all twice a week, one loopful of pus in many instances showing as many as thirty thousand colonies of the hemolytic streptococcus.

By the Dakin's solution treatment the counts were reduced rapidly. When, in the course of a treatment, a count suddenly increased, the surgeon sought and generally found an unobserved pus pocket to which the solution had not been applied.

When accidents occurred in the laboratory resulting in the production of solutions that were weak even to a very small degree, the colony counts would not show the anticipated decreases. If the solution happened to be the least bit too strong there was decided local irritation, and the surgeon was at all times able to call the attention of the technician to such errors.

When the fields became sterile, the necessary operations were performed, after which the counting was resumed, in view of the fact that at times there was a subsequent lighting up of the infection. When a field was finally sterile, or in case no organisms persisted except the staphylococcus albus, the wound was sutured or allowed to close and a complete recovery resulted. This method of treatment approached the ideal.

Do we hear to-day of the wonderful results following the use of Dakin's solution? No. Is Dakin's solution universally used at present? It is not; because it is not to-day giving the results which we formerly believed it gave. And the reason for this is that it is not made up with the care and precision previously employed. It is even at times made by dissolving tablets in water, and the surgeon has no knowledge of its strength or of its reaction.

Whether made by using a solution of bleaching powder and sodium carbonate or, better, by passing chlorine gas from a cylinder of condensed chlorine through a solution of sodium carbonate, it should first be titrated with tenth normal sodium thiosulphate in order to determine and correct its strength, and then titrated and corrected as to its reaction.

The reasons, then, which explain why Dakin's solution is not at present more universally used are: First, it is generally believed to be too troublesome to make it accurately, and when made up carelessly it does not give the proper results; second, it is difficult to apply it properly, and when improperly employed it is not effective.

In reality, the solution can be made accurately without difficulty. The necessary apparatus is on the market, and consists of a cylinder of compressed chlorine, a simple chlorine water, a gas diffuser, tubing and a large earthenware crock or jar. Aside from the chlorine the only chemical needed to make up the solution is dry or monohydrated sodium carbonate. For titrating the strength, three chemicals are necessary: glacial acetic acid, a ten per cent solution of potassium iodid and tenth-normal sodium thiosulphate (24.82 grams per liter); for reducing the strength, a 1.5% solution of sodium carbonate; for titrating the reaction, dry phenolphthalein, a 1% alcoholic solution of phenolphthalein and half-normal boric acid solution (31 grams per liter) and for reducing the alkalinity, dry boric acid. It is neither an extensive nor an expensive outlay. When these solutions are made up, the method of procedure is quite simple and may be found in any recent textbook on surgery or bacteriology.

As to the details of the treatment, any recent work on surgery may be consulted, but all physicians who were surgical officers during the war, and in fact most of the medical officers who served in the army hospitals, are familiar with the proper methods of application.

Let us get surprisingly good results by properly using accurately made Dakin's solution.

G. E. M.

PIONEER PHYSICIANS OF PENNSYLVANIA

THE WYOMING VALLEY REGION

The supposedly richest man in the United States, the king of the automobile industry, says, "History is all *bunk;*" and yet laying aside the wider range of history in general of which every medical man, in spite of the automobile magnate's dictum, should have at least some knowledge, it is of especial value that he should learn something of the history of his predecessors in the practice of his profession. There are great lights in the profession who shine afar and whose effulgence time does not dim, pioneers in medicine. But there have been pioneers in practice who were not always pioneers in medicine and there are pioneers in medicine to-day, such as Banting and others, whom we would not class among the pioneers of early practice. Every locality has had its hardy, worthy pioneers in the practice of medicine as well as in other walks of life and it is well for us at times to forget our own busy lives and troubles, and look back upon the work of those who, without the help of modern laboratories, of hospitals, of instruments of precision, of rapid means of transportation, still covered immense areas and ministered ably to their fellow men.

The Wyoming Valley, as well as other regions of the state, had its share of such men, and a history of their lives, if fully written, would be of great interest to their successors. They were not always highly educated men even in their own profession but they were usually in advance of their fellow men even in ordinary intellectual pursuits. "The doctor of those days who attended strictly to his professional duties was a hard worked man and earned all the remuneration he received, whether it was money, country produce or mere thanks. His fees were small and it was very often the case when they had accumulated to a considerable amount the debtor settled by giving his note which he never paid."

They were not always graduates of medical colleges for there were but few medical colleges in those days and when help was needed the afflicted ones did not pause to ask whether the doctor could show a diploma written in excellent Latin and endorsed by many worthy professors, nor did they ask whether he had registered according to the law, for there was no law requiring him to register as a qualified physician and it was more than a hundred years after the settlement of the Wyoming Valley that the first Medical Registration Act was passed, in 1881. The doctor did not always devote his whole time to the practice of his profession. He sometimes kept a boarding house as was the case of the first doctor in Wilkes-Barre, Dr. Joseph Sprague. He had remedies potent and sure and the every ready lancet was his sure standby to deplete the overloaded system. As Fisher has said in "Olden Times:"

"When the ever famous healing art was in its infancy,
It often happened on the score of sheer conveniency,
That the family doctor also doctored family, horse and cow,
For doctors were much rarer than the rarest of them now,
They always rode on horseback, and gen'rally the gallop,
With saddle bags and pockets full of calomel and jalap,
And Epson salts and senna too, and hellebore and borax,
And herbs and teas for stomach-aches, the bowels and the thorax;
And aloes for cathartics mild and ipecac-emetics,
Peruvian bark in Holland gin for gentle diuretics.

"There were hundreds of home remedies for all kinds of complaints
All better than the best faith-cure or the prayers of the Saints;
If the children had the measles or the matter was in doubt,
They had to drink sheep-saffron tea to drive the rascals out."

And yet there seems to have been need of physicians in the early days although the records do not show that any came with the first adventurers from Connecticut in 1763. "True to their New England instincts every attempt at settlement witnessed the presence of a school teacher and a minister of the gospel, but no special inducements were held out to followers of Esculapius."

Dr. Joseph Sprague was the first physician to settle in Wilkes-Barre. He came with his family from Poughkeepsie, N. Y., between 1770 and 1772, as his name appears on a list of settlers on the Susquehanna in 1771. Miner, in his history of Wyoming, says Dr. Sprague was here as early as 1770 and that this may be regarded as the date of the first permanent settlement in Wyoming, though we know there were white settlers here as early as 1763.

The people of Wilkes-Barre lived at that time in the stockade at Mill Creek and there were but five white women in the township at that time. Dr. Sprague, the physician of the settlement, had the largest building in the stockade and added to his scant income from his profession by keeping a boarding house. Here some who later became well known in the affairs of the valley had their quarters.

For bread they used corn meal as the only mill in the settlement was a samp mortar for pounding grain.

Dr. Sprague would take his horse with as much wheat as he could carry and go to the Delaware 70 or 80 miles away to have it ground, and as there were no roads other than a bridle path this was not a trifling distance.

Whether Dr. Sprague had a diploma or not we do not know, but judging from a communication from him to the Supreme Executive Council of Pennsylvania we infer that part of his early education had been neglected and that he lived before the days of Webster's Spelling Book. This is his letter:

> "The present Surcomstances of this Place Stops the Mouth of Every one that is a friend to government; Know one Dare to say one word in behalf of government, or mutch more to inform government, as he would amedely fall a Sacrifice to Lawles and arbatary Power; for this Reason thar is many good Sitezens in this place that Dare not apear in the behalf of government but are obliged to be Silent and mute."

In spite of low and uncertain fees from the practice of medicine he evidently acquired considerable property, as is shown by his deeds to others of certain lots in Wilkes-Barre. He was twice married; his second wife being Eunice Chapman, of Colchester, Connecticut. He had several childen by his first wife and one of his sons fell in the battle of Wyoming. Stewart Pearce in his annals of Luzerne, says that Dr. William Hooker Smith, Dr. Joseph Sprague and Dr. Lemuel Gustin were the earliest physicians of the valley and they were all in the battle of

Wyoming. The last named received a bullet through his hat.

Dr. Sprague's domestic relations were possibly as uncouth as his English, for we find that sometime between 1786 and 1790, Eunice Sprague, of Wilkes-Barre, filed a libel in divorce against "Joseph Sprague, Practitioner of Physic," and set forth that in the year 1769 she was lawfully joined in holy bonds of matrimony with Dr. Sprague. The grounds alleged were: "barbarous and cruel treatment, etc." The divorce was granted. Of the subsequent life of Dr. Sprague little is known. Charles Miner, the historian, says he died in Virginia. His widow returned to the Valley from Connecticut whither she had gone after the expulsion of the Connecticut settlers by the Pennamites, and lived in a small log house on the southeast corner of Main and Union Streets, directly opposite the present residence of Dr. J. T. Howell. This was long known as Granny Sprague's corner even after the house had gone. The influence of her husband's skill was not lost on the wife and when thrown on her own resources, she engaged in midwifery and practice among children, for which by nature she was well fitted. Wesley Johnson, in the Historical Record, says: "Mrs. Eunice Sprague was in all probability the first woman to practice medicine in these parts, and when I was a small boy I often heard the old people speak of 'Granny Sprague' as a successful practitioner of midwifery and of the healing art among children." After a long and useful life she died in Wilkes-Barre, April 12, 1814. "What a thrilling story could have been written then of the life of a good woman who may most fittingly be included in the *Pioneer Practitioners of Medicine!"* She was 46 years old at the time of the battle and massacre of Wyoming and her recollections of early times were largely utilized by the earlier historians of the Valley.

Possibly the second physician to locate in Wilkes-Barre was Dr. Wm. Hooker Smith, who settled here in 1772. His father, Rev. John Smith, a Presbyterian clergyman, was the only Presbyterian clergyman in New York City in 1732 and such was the feebleness of his congregation that he preached one-third of his time at White Plains, where he died before the Revolutionary War. His son, who later had such influence in the community and who filled so large a place in public estimation in the Wyoming Valley, was born in 1724 and must have been 48 years old when he came to Wilkes-Barre.

A native of New York, it would be interesting to know why and how he drifted to the Wyoming Valley. His son-in-law was Dr. Lemuel Gustin. He probably came about the same time as Dr. Smith. They both made purchases of land in the Valley. Dr. Smith was a generation ahead of his time in recognizing the value of the mineral deposits of the Valley, and as early as 1791 purchased the right—the first in our local annals—to dig iron ore and mine stone coal near Pittston. The first purchase was made of a Mr. Scott, of Pittston, for a sum of five shillings, Pennsylvania currency. Numerous other such investments were made by him between 1791 and 1798 throughout the Valley, the result being to stamp the purchaser as an enthusiast and to make him an object of ridicule. Little did those who scoffed at him know of the immense wealth beneath their feet in the millions of tons of anthracite coal, the mining of which was later to be the chief industry of the Valley.

From July 3, 1778 to the close of the Revolutionary War Dr. Smith acted as army surgeon to the post at Wilkes-Barre.

Miner says: "He was a man of great sagacity and tact as well as of an excellent education, his influence was extensively felt and acknowledged. For many years he held the first rank as a physician and from the numerous cures performed, the old people thought him unequaled." One of his patients, Follet, had been scalped and wounded by an Indian spear which penetrated his stomach so that the centents came out at his side, and his recovery excited wonder, and the skill of the physician was greatly praised; but Dr. Smith was modest enought to say that nature was the physician that made the cure.

In addition to his common sense, which was admitted by Miner and others to be great, he possessed certain eccentricities, one of which was his belief that he had discovered the secret of transmuting base metals into gold. In advanced life he published a book entitled "Alchymy Explained and Made Familiar; Collected from the Alchymist's Rock, or Philosopher's Stone. By William Hooker Smith, M.D., Putman Township, Luzerne Co., Jan. 1, 1811. Printed for the Author."

A score of years after his death Congress, in 1838, recognized his Revolutionary service by voting $2,400 to his heirs. The petition to Congress was presented by Dr. Andrew Bedford, a grandson of Dr. Smith's daughter, Sarah, who married James Sutton, of Exeter. Dr. Bedford was born in 1800 and was one of the early physicians of that part of the state but not of Wilkes-Barre.

Dr. Smith twice married and had a numerous family. One of his daughters married Isaac Osterhout and their son, Isaac S. Osterhout was the founder of the Osterhout Free Library of Wilkes-Barre.

Dr. Lemuel Gustin was another pioneer physician of the Wyoming Valley and came here no doubt with Dr. Wm. Hooker Smith, with whom he studied medicine, and whose daughter he married. His wife died of the so-called putrid fever two weeks before the massacre of Wyoming in 1778.

He was one of the signers of the Capitulation and is said by Peck to have been the bearer of the flag of truce to the British Commander. He was one of the last to leave the bloody field where he, with his associates attended the wounded.

After the battle, Dr. Smith and Dr. Gustin embarked their families on a raft or rude boat and escaped down the Susquehanna. Dr. Gustin subsequently practiced medicine in Carlisle, Pa., where he died in 1805. His second wife was Rebecca Parker, of Carlisle, and of their six children, three, James, Samuel and Richard, became physicians and no doubt their names will figure among the pioneer physicians of another part of the state.

From this time on, other physicians settled in Wilkes-Barre and adjoining towns and it was not necessary longer for two physicians to cover the territory of 150 miles as was done by Dr. Sprague and Dr. Smith in the early days. Among them Dr. Matthew Covell and his son, Edward, were especially prominent in the early days of the Valley (referred to more extensively in "Some Old Books and Their Owners," by the present writer, Transactions of Luzerne County Medical Society, 1921). Dr. Matthew Covell was a highly educated man and for a long time was the reigning functionary of his profession, with the field almost to himself. He was evidently a man of some importance and hospitable to strangers. The Duke de la Rochefoucault-Liancourt, a victim of the French Revolution and exiled from his home land in 1794 with Prince Talleyrand-Perigord, visited the Wyoming Valley in 1795 and makes the following reference in his diary: "At last we reached Wilkesbarre. At Dr. Covell's we found a good fire, a good stable, good eggs, salt meat (fresh meat is entirely out of the question) and thus as we smoked our segars, indulged the pleasant thought of having escaped all misfortunes."

Dr. Covell died in 1813. His son, Edward Covell, was at that time a student of medicine in Philadelphia, having graduated from Princeton College in 1812. Whether he received a medical diploma or not we do not know. Dr. Johnson says he studied medicine under Dr. Benjamin Rush, but as Dr. Rush died in 1813 and Dr. Covell graduated at Princeton in 1812, he could not have been long under Dr. Rush's instruction. He succeeded his father in practice and occupied a very prominent place in the community. From his medical books and bound journals of the day, now in the Luzerne County Medical Society Library, we know he was one who kept abreast of the time in all things medical.

Another interesting pioneer of the early part of the last century was Dr. Mason Crary who came to Luzerne County in 1804. His grandson, a prominent dentist of Wilkes-Barre, tells me that soon after settling here he rode down the river as far as Berwick, viewing the country generally on a sort of vacation trip. It happened that a man was ill there with typhoid fever. The local magnate of the place, a Mr. Beach, meeting the young doctor, insisted that he should take charge of the patient. Dr. Crary at first demurred as he expected to return to Wilkes-Barre, but Mr. Beach insisted and the doctor yielded and stayed. As a result he married Desire Beach, the daughter, and settled in Berwick where he remained until 1814. From this happy union are descended many of the Crarys of Luzerne County. Dr. Crary returned to Wilkes-Barre in 1814 and located at the corner of South Main and Northampton Streets, in the brick house that has recently, in the present year, been torn down to be replaced by a modern fireproof building.

Dr. Crary was an original, independent and interesting character. He did not hesitate to advertise himself and his profession, though strictly ethical in his treatment of his medical brethren. Here is one of his many curious advertisements:

> "Dr Crary informs the public that he has removed his family to the house lately occupied by Judge Gibson, in Wilkes-Barre, and has just received a fresh supply of general drugs and medicines. Crary's antiseptic, Family Physic in Pills [note the *Antiseptic* a hundred and ten years ago!] will be sold by the dozen or single boxes. Great allowance by the dozen and the money returned at any time if the pills are not damaged. Storekeepers will find it to their advantage to keep a supply of the above, cheap and safe Family Physic. He is not ambitious of being called a half-price physician yet he disapproves of raising wages in consequence of ardent spirits being a little higher; he prefers taking a little less stimulus and using more industry; his charges shall be as low as any regular bred physician, always favoring the industrious and virtuous poor, and discharge his duty without prejudice either religious or political. He will not under any pretence call to see other physicians' patients and endeavor to prejudice them against their physician. He gives advice either written or verbal, gratis, at his shop. Wilkes-Barre, July 1, 1814."

Dr. Crary became a prominent physician with a very large practice extending for miles up and down the Susquehanna and his success in certain lines was considered almost marvelous.

There were many other interesting men of the profession in this region, but the limits of this article will not permit even short biographies. Among them Dr. Nathaniel Giddings, located in Pittston Township, in 1783; Dr. Oliver Bigelow, at Forty Fort; Dr. Crissey, at Plymouth; Dr. Christel, Dr. Baldwin, Dr. George Trott, Dr. Asa C. Whitney, Dr. Gaylord, and others, and especially worthy of mention, Dr. Thomas Miner, Dr. John Smith and Dr. Edward Mayer.

We of a later day possibly fail to recognize their hardships and the disadvantages under which they worked, and yet their influence has come down to us, and the spirit shown by many of them still prevails in the good old Wyoming Valley.

An interesting side light on the diseases of the Valley is given in Stewart Pearce's Annals:

> "In 1777 Jeremiah Ross returned from Philadelphia where he had been on a visit, and brought with him the small-pox. This terrible ravager of the human family could at that time be only successfully met by the process of inoculation. Others in the settlements contracted the disease, and great alarm prevailed among the people. Pest-houses were established in each township, half a mile from any road, where persons who had not been inoculated were placed under treatment. The small-pox was a great terror to the Indians, and it is related that when they entered Forty Fort after the battle the women cried out, 'Small-pox! small-pox!' The savages, however, undersood the ruse, and were not to be deterred from their work of plunder.
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> "A malignant disease, called putrid fever, prevailed in 1778. It was contagious, and several died. In 1794, a fatal form of typhus fever raged along the Susquehanna, and baffled the skill of the physicians. The disease was supposed to be yellow fever, and in some localities whole families fell victims to its ravages.
>
> "The fever and ague has raged at various periods along the Susquehanna ever since the white man appeared on its banks. Shikellimus, the viceroy of the Six Nations, residing at Shamokin, died from this disease in 1749."

83 South Franklin St.

Lewis H. Taylor, M.D.

TOXIN-ANTITOXIN

The following information was received from the Pennsylvania State Department of Health by Dr. Edward Martin, Chairman of the Committee on Public Relations of this Society:

1. The free distribution of toxin-antitoxin to children of school age was discontinued on June the 1st, owing to a lack of appropriation for this purpose for the present biennial allotment period.
2. Beginning June the 1st, the free distribution of toxin-antitoxin for children of pre-school age (six months up to and including six years) was established. This was made possible by application of Federal Funds allotted to the state under the Sheppard-Towner Act.
3. The State Department of Health requires a signed Form 56B, giving the name and age of each child, in return for the free distribution of toxin-antitoxin for children of pre-school age.
4. The State Department of Health will furnish toxin-antitoxin for children of school age to school boards, boards of health, civic or social organizations, or physicians for private practice, at thirty cents per individual (three ampules), when ordered in lots of more than thirty ampules; at forty cents per individual (three ampules), when ordered in lots of thirty ampules or less.
5. Parental consent blanks need not be forwarded when ordering toxin-antitoxin for children of school age.
6. County societies are urged to correspond with the State Department of Health, J. Bruce McCreary, M.D., Medical Director, Bureau of Child Health, regarding plans for organization for diphtheria campaigns in local communities.
7. Individual members of medical societies are urged to take up the question of permanent immunization against diphtheria in their private practice and bring the attention of their local boards of health to the importance of the procedure.

Inasmuch as the Committee on Public Relations intends to continue its endeavor along the line of diphtheria prevention, it desires that every physician in the state become familiar with the use of toxin-antitoxin for the prevention of diphtheria as well as the method of using the Schick test. It also hopes that the physicians will avail themselves of the offer of the Department of Health so that no child in the state may be deprived of the benefit of toxin-antitoxin in the prevention of diphtheria.

Dr. O. Pine queries: A President of the United States once was great or modest enough to decline a degree from a great university. Will there ever be a genius great or modest enough to decline the Nobel prize?

Dr. O. Pine queries: Why is it that every retiring chief is the best the society ever had, according to his successor? If accurate, did not the medical millennium arrive long ago, and is not betterment impossible?

Dr. O. Pine queries: We are glad to note that a medico who evolved a valuable surgical procedure forty years ago, and who in all that time persistently used it successfully, was acclaimed as a hero at a late large and important meeting. Just think of it, how great humanity's loss if he had died five years or more ago? How many good and great ideas perished because the sole exponent could not live long enough? Notwithstanding the numerous discoveries of America before Columbus, still the Genoese navigator had to make the trip that brought to romance or light these discoveries, and if he had died before reaching land, how long would it have taken some other to make the rediscovery?

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

OFFICERS' DEPARTMENT

HOWARD C. FRONTZ, M.D.
President
500 Mifflin St., Huntingdon, Pa.

HARDING MEMORIAL CAMPAIGN

Dr. Ray Lyman Wilbur, President of the American Medical Association, calls attention to the Harding Memorial campaign and urges the medical profession to support this worthy memorial, so that the fine human qualities of Warren Gamaliel Harding, twenty-ninth President of the United States, may be adequately commemorated.

The project is to raise funds for a suitable memorial to our late President Harding.

While it is beyond the time designated to make the contribution and many physicians have already contributed, it seems fitting that each member of the Medical Society of the State of Pennsylvania should have a part in honoring the memory of a man whose life was one of service to his fellowmen.

It is suggested to those who have not already contributed, that they do so, by sending at least one dollar to their County Chairman appointed by Governor Pinchot.

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg., Pittsburgh, Pa.

THE DECEMBER BOARD MEETING

The December meeting of the Board of Trustees was held at the permanent quarters of the Society, 230 State Street, Harrisburg, the first Tuesday of December. Reports were received from the Secretary, Treasurer, Executive Secretary, Councilors and the chairmen of the three standing committees of the Board. A report was also received from the chairman of the Committee on Public Health Legislation, reporting progress in the drafting of a "One Board Bill," and stating that a good constitutional lawyer had been retained to assist in drafting said bill.

The Board favorably received a letter from Surgeon General Ireland of the United States Army regarding the organization of a Military Committee in each of our county societies and recommended consideration by the various component county societies of the plan proposed by Surgeon General Ireland. This letter is published elsewhere in this number of the Journal.

A committee consisting of Dr. Theodore B. Appel, Chairman, Dr. Harry W. Albertson, and Dr. Irwin J. Moyer was appointed to redefine the duties of the standing committees of the Board of Trustees; Journal Committee, Finance Committee and Executive Committee, formerly known as the Committee on Conduct of the Executive Secretary's Office.

PRACTICE WHAT YOU PREACH

Have you heard the story of the general practitioner of medicine who immunized his own children against diphtheria with toxin antitoxin and neglected to advise his own clientele to do the same? The death of a child from diphtheria in one of this physician's families attracted the attention of the child's father to the fact that it is possible to immunize children permanently against diphtheria. Upon learning that his family physician had long since permanently immunized his own children against diphtheria the father of the dead child not only upbraided the physician for his negligence but he also promptly dissolved their relation as physician and patient.

The report of the Reference Committee on Reports of Officers and Committees to the 1923 House of Delegates contains the following regarding preventive medicine:

> "Practical preventive medicine is in the province of the general practitioner.

"President Litchfield's pointed remarks bring home to each of us the necessity for practical demonstration in our own families and lives of our firm belief in the efficacy of the toxin-antitoxin administration for the prevention of diphtheria, successful vaccination for the prevention of smallpox, the use of antityphoid vaccine for the prevention of typhoid fever, and antitetanic serum for the prevention of tetanus and the administration of iodin for the prevention of simple goiter.

"Important as these measures are, the committee feels that the opportunities for practical preventive medicine in other diseases are equally important: The prevention of diabetes, by proper supervision of the obese, prevention of nephritis and cardiac disease by the elimination of focal infections, prevention of tuberculosis by supervision of those individuals known to be exposed to the disease."

WILLIAM WHITFORD

William Whitford, for many years the official stenographer of the House of Delegates of the American Medical Association, died at his home in Chicago, December 10, 1923. Mr. Whitford has for the last 9 years served the Medical Society of the State of Pennsylvania as stenographer to the House of Delegates and to the Board of Trustees during annual sessions. Mr. Whitford's accurate skill and legislative experience rendered his services to our Society almost invaluable. His quiet unassuming presence will be sadly missed at our future annual meetings. He was a faithful servant to the organized medical profession of this country, dying twelve hours after his return to his home from reporting the Colorado Springs Session of the Western Surgical Association.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to December 15:

Allegheny: *Removal*—Joseph A. McCready from Greenwich, O., to Bendersville, Pa. *Transfer*—Alden O. Davis, 108 Neville St., Pittsburgh, from Washington County Society.

Indiana: *Removal*—Francis Reilly from Claghorne to 102 Brown St., Blairsville; Edward A. Haegele from Commodore to Clymer.

Lehigh: *Removal*—Edwin S. Gault from Lincoln, Neb., to Normal, Neb.

Luzerne: *Reinstated Member*—Albert M. Thomas, Glenn Lyon. *Death*—Henry M. Laing, Dallas, (College Physicians & Surgeons, Baltimore, '84), Oct. 20, aged 61.

Lycoming: *New Members*—W. Clair Bastian, Williamsport Hospital, Williamsport; Roy W. Crandall, Warrensville.

Montour: *Transfer*—Frank D. Glenn, Torrance, to Westmoreland County Society.

Philadelphia: *New Members*—Thomas Fitz-Hugh, Jr., Powelton Apts., Powelton and Thirty-sixth St.; Irvine M. Boykin, Elkins Park; H. Bailey Chalfant, Dilks Bldg., Pitman (New Jersey); James M. Grist, 1243 W. Lehigh Ave.; George P. Meyer, 255 S. Sixteenth St.; John P. Scott, 2069 N. Sixty-third St.; Joseph Stambul, 822 N. Ninth St.; John D. Donnelly, 1828 Pine St.; P. Howland Shaw, 424 W. Chelten Ave., Gtn.; Robert C. Loving, 3819 Chestnut St., Philadelphia. *Reinstated Members*—John A. McGlinn, 1530 Locust St.; Oscar J. Cooper, 1428 N. Twelfth St.; Herbert H. Cushing, Zoölogical Dept., Univ. of Pa.; James S. Lennon, 1608 Christian St.; Marian Francis-Self, 1703 Chestnut St.; Ben C. Gile, 1906 Chestnut St.; Hubley R. Owen, 319 S. Sixteenth St.; John L. Laird, Dept. of Health, Penna. Lab., Thirty-fourth and Locust Sts.; William S. Schantz, 5100 Warnock St.; Charles S. Pancoast, 5926 Greene St., Gtn.; Dwight B. Fuller, 208 N. Thirty-fourth St.; Samuel G. Shepherd, 2333 Wharton St.; George Woodward, 708 North American Bldg., Philadelphia. *Transfer*—David Nathan, 617 W. Main St., Norristown, from Montgomery County Society. *Removal*—Edward P. L. Shope from Morristown, N. J., to Mendham, N. J.; Charles A. LeCates from Philadelphia to 3306 Jonestown Road, Harrisburg (Dauphin Co.); E. S. Bateman from Philadelphia to 47 So. Windsor Ave., Atlantic City, N. J. *Deaths*—William E. Powell, Philadelphia (Med. Chirurg. Coll., Phila., '94), Nov. 5, aged 67; Edward F. Hilferty, Philadelphia (Temple Univ., '06), Nov. 25, aged 51; Bernhard Segal, Philadelphia (Jeff. Med. Coll., '93), Nov. 26, aged 55.

Washington: *New Members*—Philip A. Ley, Donora; James M. Moore, Midway.

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since November 15th. Figures in first column indicate county society numbers; second column, State Society numbers.

1922				
Nov. 21	Philadelphia	2023	7331	$5.00
1923				
Nov. 21	Philadelphia	1965-1981	7306-7322	85.00
29	Luzerne	239	7323	5.00
Dec. 15	Washington	123-124	7324-7325	5.00
	Philadelphia	1982-1987	7326-7331	25.00
1924				
Nov. 19	Lycoming	1-2	5-6	10.00
	Fayette	1	7	5.00
Dec. 15	Bucks	1-15	8-22	75.00
	Wayne	1-6	23-28	30.00

FREDERICK L. VAN SICKLE
Executive Secretary
230 State St., Harrisburg, Pa.

ETHICS

It has been some time since the subject of ethics has been discussed in this Journal and while we do not consider it our particular business to call it to the attention of the medical profession, yet it seems that we should not forget there is such a subject. It should not escape the attention of the profession because it is possible that some of our members may not realize the importance of the principles of medical ethics.

This subject was particularly called to our attention in a discussion on the duties and obligations of a doctor in medicine to a sick brother practitioner. It seems that a physician residing in one of the larger cities of the state was treating a patient and had occasion to call in consultation a physician from another part of the city. Very shortly after this consultation the attending physician was taken ill suddenly, was unable to treat his patient and requested the consulting physician to take charge. He did this gladly, relieving the attending physician of anxiety and care. The point made by the consulting physician is that he feels many physicians of the state do not realize the need of strict adherence to the principles of ethics in the care of other physicians' patients. In this particular case all charges made to the patient were turned over promptly to the attending physician who was ill and the good will not only of the attending physician but of the patient was therefore maintained.

In the Principles of Medical Ethics as published by the American Medical Association we find in Article III—Duties of Physician in Consultations—under Section 6, the following:

ATTENDING PHYSICIAN RESPONSIBLE

"The physician in attendance is in charge of the case and is responsible for the treatment of the patient. Consequently, he may prescribe for the patient at any time and is privileged to vary the mode of treatment outlined and agreed on at a consultation whenever, in his opinion, such a change is warranted. However, at the next consultation, he should state his reasons for departing from the course decided on at the previous conference. When an emergency occurs during the absence of the attending physician, a consultant may provide for the emergency and the subsequent care of the patient until the arrival of the physician in charge, but should do no more than this without the consent of the physician in charge."

It is quite evident that if we are to keep up the high standard of the medical profession in our every day life, and maintain the respect and honor of the people of the community, we must refrain from stooping to the commercial methods adopted by other practitioners of the healing art, and we must adhere strictly to the regulations which have been our guide for many years.

Preaching the code of ethics to the profession is not our desire. We do not feel that it is necessary more than to remind the physicians that they are being keenly observed by the public, and more and more is expected of us from year to year. We have a great duty to perform in preventive medicine and here it is that the principles of ethics will greatly help us in our association with each other and with the public.

It is hoped that every recent graduate in medicine will familiarize himself or herself with the principles of medical ethics and the unwritten rules which govern the physicians of each community, and that harmony, good will and mutual assistance will be the rule in vivid contrast to the former animosity and strife which existed.

BOARD OF TRUSTEES

MILITARY COMMITTEES

The following letter received from Surgeon General M. W. Ireland was presented to the Board of Trustees at their December meeting. After some discussion the Board instructed the Secretary to publish the Surgeon General's letter in the January number of the Atlantic Medical Journal, and to notify the various component county societies that the Board of Trustees recommended to the component county societies consideration of the organization in each society of a Military Committee:

War Department
OFFICE OF SURGEON GENERAL
Washington, November 20, 1923.

The Secretary, Medical Society
of the State of Pennsylvania,
8014 Jenkins Arcade, Pittsburgh, Pa.

My Dear Doctor:

In order properly to meet the responsibilities of the medical profession of America in the program for national defense it is necessary to accomplish the enrollment of all eligible men of the profession in the Medical Section of the Officers' Reserve Corps.

I am sure it is obvious to you and the members of the society of which you are a member that the organization of an adequate medical reserve contemplates and requires the support and encouragement of all members of the profession.

The advantages of enrollment and classification in time of peace of the body of the profession are conspicuous and include an avoidance of a repetition of the majority of the inequalities and defects which developed as a result of our state of unpreparedness for the World War.

It is the desire of the War Department to organize and develop the Reserve Corps so as to provide recognition by promotion in grade and assignment to function in organizations in time of peace which will entail the minimum imposition of hardships on men called to active duty in emergency and will insure military efficiency.

In order that a better understanding of Reserve Corps affairs may be developed in medical societies it is proposed that a military committee be appointed in each society.

The purpose of this committee will be:

(a) To establish and maintain contact with the War Department through the Surgeon General.

(b) To promote the organization of the Reserve Corps by procurement of enrollment therein.

(c) To receive information from the War Department in connection with the Reserve Corps and to convey the same to the society.

(d) To convey the recommendations of the society for the improvement of the organization and training of Reserve Officers.

In brief to establish an agency for the development of a more intimate association between the members of the profession and the War Department.

The organization of the Medical Section of the Reserve Corps is an outstanding obligation of my office and since proper organization of the medical men of the country for its defense program is a problem which concerns and, I am sure, interests each member of your society I am asking a continuance of your support and suggest, if appropriate, that the proposed liaison be effected.

It is requested that this matter be brought to the attention of your society and if it is considered appropriate to organize a military committee that this be done and the names of the committee be furnished me.

Very truly yours,
M. W. Ireland, *Surgeon General.*

NEW AND NONOFFICIAL REMEDIES

Protein Mixtures for Diagnosis.—Mixtures of two or more pollen, epidermal or food protein preparations. These mixtures are supplied in order that the number of skin tests to determine sensitiveness to proteins may be reduced. If sensitiveness to a given protein mixture is found, then tests are made with the individual proteins contained in the mixture. (See Pollen and Epidermal Extracts and Biologically Reactive Food Proteins, New and Nonofficial Remedies, 1923, p. 234.)

Group Allergens Diagnostic-Squibb.—A mixture of two or more allergens-Squibb in equal proportions. These protein mixtures are used to determine sensitiveness to proteins (see preceding article, Protein Mixtures for Diagnosis). Group Allergens-Squibb are marketed in vials containing 0.025 Gm. The following Group Allergens-Squibb have been accepted: Group Allergens-Squibb Type I (Beets, Carrot, Parsnip, Radish, Turnip); Group Allergens-Squibb Type II (Cabbage, Celery, Lettuce, Onion, Spinach); Group Allergens-Squibb Type III (Artichoke, Asparagus, Cauliflower, Rhubarb, String Bean); Group Allergens-Squibb Type IV (Cucumber, Egg Plant, Pumpkin, Squash, Tomato); Group Allergens-Squibb Type VI (Apricot, Cherry, Peach, Plum, Prune); Group Allergens-Squibb Type VII (Cantaloupe, Grape Fruit, Lemon, Orange, Watermelon); Group Allergens-Squibb Type VIII (Apple, Banana, Pear, Pineapple, Fig); Group Allergens-Squibb Type IX (Almond, Chestnut, Filbert, Hazel Nut, Peanut); Group Allergens-Squibb Type X (Black Walnut, Brazil Nut, English Walnut, Hickory Nut, Pecan); Group Allergens-Squibb Type XI (Barley, Buckwheat, Corn, Oat, Rice); Group Allergens-Squibb Type XII (Beef, Goat, Horse, Pork, Mutton); Group Allergens-Squibb Type XIV (Chicken, Duck, Goose, Guinea-Hen, Turkey); Group Allergens-Squibb Type XV (Blue Fish, Codfish, Haddock, Halibut, Mackerel); Group Allergens-Squibb Type XVI (Butterfish, Salmon, Sea Bass, Sole, Whiting); Group Allergens-Squibb Type XVII (Clam, Oyster, Crab, Lobster, Scallops, Shrimp); Group Allergens-Squibb Type XVIII (Black Pepper, Ginger, Mustard, Paprika, Vanilla); Group Allergens-Squibb Type XIX (Cocoa, Coffee, Tea); Group Allergens-Squibb Type XX (Egg (all proteins), Cow's Milk (all proteins), Goat's Milk (all proteins)); Group Allergens-Squibb Type XXI (Cat (hair), Cow (hair), Dog (hair), Horse (dander), Rabbit (hair)); Group Allergens-Squibb Type XXII (Chicken, Duck, Goose); Group Allergens-Squibb Type XXVI (Micrococcus Catarrhalis, Pneumococcus I, Pneumococcus II, Pneumococcus III, Pneumococcus IV); Group Allergens-Squibb Type XXVII (Staphylococcus Aureus, Staphylococcus Albus, Staphylococcus Citreus, Streptococcus Pyogenes, Streptococcus Viridans. E. R. Squibb & Sons, New York.

Pollen Antigens-Lederle.—In addition to the products listed in New and Nonofficial Remedies, 1923, p. 239, the following have been accepted: Annual Salt Bush Pollen Antigen-Lederle; Bermuda Grass Pollen Antigen-Lederle; Cocklebur Pollen Antigen-Lederle; Johnson Grass Pollen Antigen-Lederle; Mountain Cedar Pollen Antigen-Lederle; Mugwort Pollen Antigen-Lederle; Oak Pollen Antigen-Lederle; Orchard Grass Pollen Antigen-Lederle; Perennial Rye Grass Pollen Antigen-Lederle; Rabbit Bush Pollen Antigen-Lederle; Redroot Pigweed Pollen Antigen-Lederle; Russian Thistle Pollen Antigen-Lederle; Spiny Amaranth Pollen Antigen-Lederle; Yellow Dock Pollen Antigen-Lederle. Lederle Antitoxin Laboratories, New York. (*Journal A. M. A.*, Aug. 4, 1923, p. 393.)

Group Protein Extracts Diagnostic-P. D. & Co.—A mixture in equal proportions of two or more Protein Extracts Diagnostic-P. D. & Co. For a discussion of the actions, uses and dosage, see preceding article, Protein Mixtures for Diagnosis. Group Protein Extracts Diagnostic-P. D. & Co. are marketed in collapsible tubes containing sufficient material for fifty tests. The following products have been accepted: Protein Extracts Diagnostic-P. D. & Co.; Group 1 (Beef, Lamb, Pork, Veal, Mutton); Protein Extracts Diagnostic-P. D. & Co. Group 2 (Milk (all proteins), Cheese, Human Milk); Protein Extracts Diagnostic-P. D. & Co. Group 3 (Codfish, Haddock, Halibut, Herring, Mackerel, Smelt); Protein Extracts Diagnostic-P. D. & Co. Group 4 (Perch, Pike, Salmon, Bluefish, Shad, Sole); Protein Extracts Diagnostic-P. D. & Co. Group 5 (Chicken, Duck, Goose, Turkey, Squab, Guinea-Hen); Protein Extracts Diagnostic-P. D. & Co. Group 6 (Clam, Oyster, Shrimp, Scallop, Lobster, Crab); Protein Extracts Diagnostic P. D. & Co. Group 7 (White Potato, Sweet Potato, Beet, Turnip, Carrot); Protein Extracts Diagnostic-P. D. & Co. Group 9 (Celery, Asparagus, Onion, Eggplant, Radish, Garlic); Protein Extracts Diagnostic-P. D. & Co. Group 11 (Pumpkin, Squash, Cucumber, Sweet Peppers, Tomato, Rhubarb); Protein Extracts Diagnostic-P. D. & Co. Group 12 (Chestnut, Peanut, Pecan, Almond); Protein Extracts Diagnostic-P. D. & Co. Group 13 (Black Walnut, Brazil Nut, English Walnut, Hickory Nut, Butternut); Protein Extracts Diagnostic-P. D. & Co. Group 14 (Wheat, Rye, Buckwheat); Protein Extracts Diagnostic-P. D. & Co. Group 15 (Rice, Oatmeal, Barley, Corn); Protein Extracts Diagnostic-P. D. & Co. Group 16 (Apple, Pear, Prune, Plum, Fig); Protein Extracts Diagnostic-P. D. & Co. Group 17 (Cantaloupe, Watermelon, Peach, Cherry, Banana, Pineapple); Protein Extracts Diagnostic-P. D. & Co. Group 18 (Orange, Lemon, Grapefruit, Strawberry, Blackberry, Raspberry); Protein Extracts Diagnostic-P. D. & Co. Group 19 (Coffee, Tea, Cocoa); Protein Extracts Diagnostic-P. D. & Co. Group 24 (Hair (cattle), Hair (cat), Hair (dog), Hair (horse); Protein Extracts Diagnostic-P. D. & Co. Group 25 (Hair (rabbit), Hair (guinea-pig), Wool (sheep); Protein Extracts Diagnostic-P. D. & Co. Group 26 (Feathers (chicken), Feathers (duck), Feathers (goose); Protein Extracts Diagnostic- P. D. & Co. Group 27 (Ginger, Mustard, Pepper (black), Pepper (red), Paprika, Sage). Park, Davis & Co., Detroit. (*Journal A. M. A.*, Aug. 11, 1923, p. 477.)

Elixir of Luminal.—Each 4 Cc. (one fluidrachm) contains 0.015 Gm. (¼ grain) of luminal in a menstruum containing alcohol 20 per cent. For a discussion of the actions, uses and dosage of luminal, see New and Nonofficial Remedies, 1923, p. 63. Winthrop Chemical Co., New York.

Scarlet Red Medicinal-"National."—A brand of scarlet R. Medicinal Biebrich-N. N. R. For a discussion of the actions, uses and dosage of scarlet R. medicinal Biebrich, see New and Nonofficial Remedies, 1923, p. 275. National Aniline & Chemical Co., New York. (*Journal A. M. A.*, August 18, 1923, p. 548.)

Dr. O. Pine queries: Who ever heard of a quack or pseudo-medico calling upon one of his own kind when he believes that he is seriously ill?

COUNTY MEDICAL SOCIETIES

REPORTERS OF COUNTY SOCIETIES

Adams—James P. Dalbey, M.D., Gettysburg.
Allegheny—Lester Hollander, M.D., Pittsburgh.
Armstrong—Jay B. F. Wyant, M D., Kittanning.
Beaver—Francis H. McCaskey, M.D., Rochester.
Bedford—N. A. Timmons, M.D., Bedford.
Berks—Clara Shetter-Keiser, M.D., Reading.
Blair—James S. Taylor, M.D., Altoona.
Bradford—Stanley D. Conklin, M.D., Sayre.
Bucks—Anthony F. Myers, M.D., Blooming Glen.
Butler—L. Leo Doane, M.D., Butler.
Cambria—Joseph J. Meyer, M.D., Johnstown.
Carbon—Jacob A. Trexler, M.D., Lehighton.
Center—James L Seibert, M.D., Bellefonte.
Chester—Henry Pleasants. Jr.. M.D., West Chester.
Clarion—H. A. Wick, M.D., New Bethlehem.
Clearfield—W E. Reiley, M.D., Clearfield.
Clinton—Clair B. Kirk, M.D., Mill Hall.
Columbia—C. B. Yost, M.D., Bloomsburg.
Crawford—Cornelius C. Laffer, M.D., Meadville.
Cumberland—Calvin R. Rickenbaugh, M.D., Carlisle.
Dauphin—W. Minster Kunkel, M.D., Harrisburg.
Delaware—George B. Sickel, M.D., Chester.
Elk—Joseph E Madara, M.D., St. Marys.
Erie—Anna M. Schrade, M.D., Erie.
Fayette—Hugh Ralston. M.D., Uniontown.
Franklin—Samuel D Shull, M.D., Chambersburg.
Greene—Thomas B. Hill, M D., Waynesburg.
Huntingdon—John M. Keichline, Jr., M.D., Huntingdon.
Indiana—H. Boydston Smith, M.D , Blairsville.
Jefferson—W. A. Hill, M.D., Reynoldsville.
Juniata—W. H. Banks, M.D., Mifflintown.
Lackawanna—G. A. Clark, M.D., Scranton.
Lancaster—J. Sullivan, M.D., Lancaster.
Lawrence—William A. Womer, M.D., New Castle.
Lebanon—W. Horace Means, M.D., Lebanon.
Lehigh—Willard C. Masonheimer, M.D., Allentown.
Luzerne—H Irvin Evans, M.D., Ashley.
Lycoming—Wesley F. Kunkle, M.D., Williamsport.
McKean—Francis DeCaria, M.D., Bradford.
Mercer—M. Edith MacBride, M.D., Sharon.
Mifflin—F. A. Rupp, M D., Lewistown.
Monroe—Charles S. Flagler, M.D., Stroudsburg.
Montgomery—John C. Simpson, M.D., Norristown.
Montour—John H. Sandel, M.D , Danville.
Northampton—Wm. A. Finady, M.D., Bethlehem.
Northumberland—Charles H. Swenk, M.D., Sunbury.
Perry—A. R. Johnson, M.D., New Bloomfield.
Philadelphia—Franklin M. Crispin, Philadelphia.
Potter—Ross H. Jones, M.D., Coudersport.
Schuylkill—Arthur B. Fleming, M.D., Tamaqua.
Snyder—John O. Wagner, M D., Beaver Springs.
Somerset—H. Clav McKinley, M.D., Meyersdale.
Sullivan—P. G. Biddle. M.D.. Dushore.
Susquehanna—Robert B Mackey, M.D., Montrose.
Tioga—H. A. Vosburg, M D., Arnot.
Union—Oliver W. H. Glover, M.D., Laurelton.
Venango—John F. Davis, M.D., Oil City.
Warren—M. V Ball, M.D., Warren.
Washington—Charles C. Cracraft, M.D., Claysville.
Wayne—Hugh Stevenson, III, M.D., Honesdale.
Westmoreland—D. Allison Walker, M.D., South West.
Wyoming—Herbert L. McKown, M.D., Tunkhannock.
York—Maurice C. Wentz, M.D., York.

January, 1924

COUNTY SOCIETY REPORTS

ATTENTION IS CALLED TO THE ACTION OF THE BOARD OF TRUSTEES OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA IN DESIGNATING THE OFFICE OF THE SOCIETY AT 230 STATE ST., HARRISBURG, AS THE CLEARING HOUSE TO SECURE LOCATIONS FOR PHYSICIANS AND LOCALITIES DESIRING MEDICAL SERVICE.

ALLEGHENY—DECEMBER

The regular monthly Scientific Meeting of the Allegheny County Medical Society was held at 43 Fernando Street, Pittsburgh, Pa., Tuesday, November 21, 1923. The meeting was called to order by the President, Ernest W. Willetts, at 8: 35 P. M. Attendance: 180.

Dr. George W. Stimson read a paper entitled "Infections of the Nasal Accessory Sinuses." Frequency and importance of sinus infection was brought out. Diagnosis should be arrived at after weighing all symptoms. Practice of making diagnosis upon a single symptom, notably x-ray, condemned. Films frequently at variance with operative findings. A shadow in a sinus alone must not be taken as an indication for operation. It is seldom needed in acute cases; but in chronic ones, as one of the aids to diagnosis and for knowledge of anatomy, value cannot be overestimated. Transillumination is indispensable and deserves more general employment. The newer orbito-maxillary method for antra the best and has replaced older oral method with light held in closed mouth.

Opinion as to value of antral puncture and irrigation divided. Fatal accidents have been reported, the most feasible cause being air embolus. Elimination of air blast preceding irrigation, or cautious use, will obviate danger. In writer's opinion it has high diagnostic and therapeutic value. Ten cases were reported illustrating importance and relative value of various aids to diagnosis and operative measures selected for individual requirements. Condemned indiscriminate destructive surgery of physiologically functionating tissue within the nose. Better to err on side of conservatism and take out more later if necessary. What has once been removed can never be put back.

A case of chronic unilateral pansinusitis showed how the requirements were met by intranasal surgery, middle turbinectomy, enlargement of the nasofrontal duct, ethmoidectomy, sphenoidectomy, and window opening into antrum. One of chronic frontal sinusitis with fistula cured by radical Killian operation. Six months later similar and independent condition on opposite side, also cured by a Killian. Another case brought out swimming as etiological factor. Cautioned against swimming under water, unless perhaps nose and mouth kept closed while submerged; or better, persons with acute nasal infections, for fear of secondary involvement of sinuses, should refrain entirely from going in bathing. Another case had been diagnosed elsewhere as chronic bilateral maxillary sinusitis, but operation withheld presumably because diagnosis of pulmonary tuberculosis had been made—no bacilli found—and danger of general anesthetic. Seen year later by writer, lungs quiescent, operated under local anesthesia, double Caldwell-Luc, ethmoidectomy and sphenoidectomy. Case brought out two points: first, conceivable man never had tuberculosis, but was suffering from local and constitutional effect of large focus of infection; second, practicability of extensive sinus surgery under local anesthesia—a radical antrum operation through canine fossa, ethmoidectomy and sphenoidectomy accomplished on both sides, one hour and forty minutes consumed, practically no pain, operator not hurried nor interfered with by anesthetist, little bleeding, no packing, and added risk of general anesthetic during operation upon upper air passages eliminated.

Dr. Stimson's paper was discussed by Drs. J. M. Thorne, A. J. Guerinot and Harvey Thorpe.

Dr. Thorne called attention to the types of mixed infection following the appearance of influenza, of the increase in the incidence of sinusitis during the past two winters, and of the selective action of the prevailing infection for the sinuses. He spoke of infection of the ethmoid and sphenoid sinuses as a frequent cause of eye disease, i. e., optic neuritis, iritis, iridocyclitis, and the scotomata; of the difficulty of diagnosis of borderline cases, particularly when transillumination and x-ray were negative; of the value of needle puncture of the antra with irrigation as a diagnostic and therapeutic procedure, and of the value of radical operation when other treatment fails, all of which was abundantly illustrated by Dr. Stimson's case reports.

Dr. S. A. Chalfant presented a paper, entitled "Uterine Hemorrhages." Discussed by Dr. B. Z. Cashman.

Dr. L. H. Landon read paper, entitled "The Value of Early Diagnosis in the Successful Treatment of Acute Pancreatitis." Discussed by Drs. T. G. Simonton, H. R. Decker and L. H. Landon in closing.

Dr. C. C. Hartman read a paper, entitled, "The Present Status of Treatment of Pneumonia; (1) Specific Treatment, Serums, Vaccines, etc." The author outlined briefly the development of the serum for Type I, and discussed the apparent benefits and effect on mortality. He also pointed out the apparent relationship of bacteremia to mortality. He believes that the serum is of value when properly used and questioned the rapidity of diagnosis and the thoroughness of treatment in many cases. Polyvalent serums were considered to be of no avail because no potent serum has been produced against any of the strains individually except Type I, and should not be used. Chicken serum was thought to be not of sufficient value to be generally used. Vaccines were considered to be of no distinct value in treatment, but may have a place in prophylaxis developed for them. Pneumococcus antibody solution was reviewed and it was felt that it may prove of disinct value, provided it can be refined to such an extent as to eliminate the severe reactions. Ethylhydrocuprein was discussed and considered to be too toxic, in its present form, to be used except in investigative work. Leucocytic extract was not considered to be of value.

Dr. J. I. Johnston presented a paper (2) "Symptomatic Treatment of Acute Pneumococcic Lobar Pneumonia." From January 1, 1923, to October 15, 1923, there have occurred 104 cases of acute pneumococcic lobar pneumonia in the medical wards of the Mercy Hospital. Of this number, 41 have been typed as follows: Type I—4 cases, Type II—4, Type III—4, Type IV—29. The remaining cases were not typed, either because sputum could not be secured, or the patients were far advanced in the disease. Of these 104 cases, 47 have died, an appalling mortality, even for this most serious disease. Two patients of the Type I group had the serum, 87 received digitalis, 81 sodium bicarbonate, 44 oxygen, 12 strychnine, 11 pituitary extract, 34 atropin, 35 caffein, and 30 morphin.

We do four things in our service: We give digitalis at the start for sensitization to that drug; we use oxygen to counteract anoxemia; we use alkalies for the oxonemia; and we use strychnine late in the disease for a fatigued respiratory center. First, *Digitalization:* Patients in our department are given two drachms a day of tincture of digitalis for a period of two days. Second, *Oxygen:* This is administered from the start, primarily because of the lack of oxygen, to accustom the patient to take it, and also because of cough, which we believe it tends to relieve. It is administered with the Collins-Barrach apparatus, a special inhaler of our own, from an ordinary oxygen tank, and occasionally according to a method advocated by Doctor John R. McCurdy of this city. Third, *Sodium Bicarbonate:* This drug is administered in sufficient daily dose, namely, at least two drachms per day until the urine is alkaline. We instruct our nurses to test the urine after each micturation with ordinary litmus paper, and when alkalinity of the urine occurs, the sodium bicarbonate is discontinued until the urine becomes acid again, when it is resumed. Fourth, *Strychnine:* We believe that this drug has a place late in the disease and during the time fatigue of the respiratory center occurs, as this is not an infrequent cause of death in this disease. The idea of giving this drug is alone for the purpose of exciting reflex, which it does within physiological limits. Further treatment consists, first, of *Diet:* Too much stress has been laid upon diet in pneumonia, and we feel that a very light and easily handled diet is all that need concern us. One of our colleagues practically gives his patient nothing but water, which we think is rather extreme, as the presence of a small amount of protein and carbohydrates in the food is essential to counteract additional toxemia. Care and medicine still play the larger part in the management of this infection. Second, *Rest:* We feel that sleep is a very essential and conserving measure in carrying the patient through. We use, therefore, always when possible, morphin at night, omitting codein and other drugs, as well as all expectorants which have no place in lobar pneumonia. In the severe delirium with restlessness and insomnia we use bromides in large doses, together with chloral in small doses frequently repeated. Hydrotherapy, if carefully given, may act as a sedative measure, but there is generally too much bathing in these cases. Third, *The Distressing Abdominal Distensions:* Pituitary extract, surgical size, is given frequently, for we believe that this drug is exceedingly useful in maintaining or even stabilizing systolic blood pressure, as well as relieving the distension. For the pleuritic pain occasionally encountered, one good broad adhesive strap properly applied over the lower thorax seems useful. High temperature is rarely interfered with, for a good fastigium and a high leucocytic count usually spell a successful outcome. With the exception of Type I serum in our department we still believe that this disease is treated symptomatically by care and drugs.

Dr. Hartman's and Dr. Johnston's papers were discussed jointly by Drs. W. W. Maclachlan, I. H. Alexander, H. P. Ashe, H. C. Westervelt, I. J. Moyer, Paul Titus, J. J. Rectenwald, and Hartman and Johnston in closing. Adjournment 10:45 P. M.

Lester Hollander, Reporter.

BUTLER—NOVEMBER

On November 13, 1923, the Butler County Medical Society was called to order at 9:00 P. M. by President McCall, with the following members present: Drs. Hockenberry, J. S. and W. B. Campbell, Young, Ziegler, W. J. Grossman, Elrick, Beatty, Headland, Imbrie, Dunkle, Hazlett, Cowden, Atwell, Clark, Armstrong, McCall and Doane; also Dr. Max Nast, a candidate for election.

Minutes of the previous meeting were read and approved; also minutes of a special meeting held at the Secretary's office, on October 13, to take appropriate action on the death of Dr. J. L. Christie of Conoquenessing, which had occurred early the same day. The following, as presented by the Committee, was read:

In Memoriam of Dr. J. L. Christie

Whereas, It has been the will of God to remove from amongst us our colleague and beloved friend, Dr. J. L. Christie; and

Whereas, It is proper that we should give expression to our great loss and extend to his family our sincere sympathy in their bereavement; therefore be it

Resolved, That we express our deep sorrow for the loss of a kind and faithful husband and father as well as a citizen of noble qualities and characteristics. The loss to his family, to the community and to the Butler County Medical Society seems irreparable when viewed from a purely human standpoint.

The Doctor was a charter member of the Butler County Medical Society having practiced medicine at Conoquenessing, Butler County, Pa., for the past forty-seven years. His passing marks the going of our oldest member. We feel very keenly the loss that our Society has suffered and it will be hard for us to accustom ourselves to get along without his help and assistance. As was characteristic of the Doctor, he was faithful in his attendance, and devoted to all measures preventing and lessening human ills and suffering.

He was a man unassuming in manner, of deeply religious convictions, slow to criticize and quick to forgive, alike kind and lovable to family, colleagues and friends.

The shining characteristics in the Doctor's life were marked by the spirit of service and faithfulness, and apparently absolute forgetfulness of self. With these sterling qualities, he naturally and unconsciously attracted a host of close friends that will long cherish him in their memories. Therefore, be it further

Resolved, That these resolutions be spread upon the minutes of our proceedings, that a suitable copy be sent to the bereaved family, likewise, a copy sent to the public press and The Atlantic Medical Journal for publication.

The Medical Society of Butler County,
(Signed) J. C. Atwell,
(Signed) W. J. Grossman,
(Signed) R. A. Walker,
Committee.

A card from the family of the late Dr. Christie was also read, expressing appreciation of the sympathy extended by the Society.

A communication from Dr. Edward Martin, Chairman of the Committee on Public Relations, was read, in which was set forth the desirability of this Society's appointing a committee to carry out a campaign of preventive medicine, and suggesting that it might be done through agencies such as churches, school teachers, rotary clubs, scouts, etc. Speeches of various members of the Society indicated a desire to assist in this work, but the sentiment was in favor of the state taking the initiative and putting on the propaganda. This was embodied in a motion by Dr. Hockenberry and was carried.

Applications of Dr. Byron Lowe Ramsey and Dr. Max Schaul Nast were then acted on; the two candidates declared unanimously elected.

Dr. Dunkle reported that the child with infantile spinal paralysis, shown to the Society previously by Dr. Maxwell and to whom he had administered serum by injection, had improved materially on one side.

The subject "Insulin" was then introduced and Dr. Atwell was called upon to discuss it, after which Dr. Ziegler emphasized the importance of a balanced diet in Diabetes and gave the history of a case illustrating this. Adjourned at 10:25 P. M.

An outline of Dr. Atwell's remarks follows:

Insulin

Not being warned that I should be expected to talk on the subject of insulin this evening, I therefore am not prepared as I should like to be. My remarks will be more or less rambling. First, let me say that perhaps there has not been a greater contribution to science in the last three decades than that given us by the Toronto group in this discovery of insulin.

The mortality from this hitherto incurable malady, diabetes mellitus, has been reduced to almost the zero point. Indeed, I can see no reason why anyone residing in an intelligent community and among scientific physicians need die of diabetes mellitus.

Early last year, it was thought and I believe taught by Dr. Banting himself that only about 20 per cent of diabetic cases would require insulin for the control of their disease, diet and proper management being capable of controlling the disease in the remaining 80 per cent of the cases. From rather close observation of various clinics in large hospitals, I believe the attitude of the profession has changed in regard to this and I believe that almost every case of diabetes mellitus now receives insulin for the control of the disease, and this is as I believe it ought to be.

Now, in regard to who shall administer insulin: I can see no reason why any intelligent physician who is willing to spend a little time in the study of metabolism, food values and their relation to individual requirements should hesitate to administer insulin. Further, I believe that where at all practical, every case should be hospitalized for a brief period of time for the following reasons:

First.—So that patients may be placed on their usual diet and their blood sugar and sugar output determined, then placed on a test diet so as truly to learn their carbohydrate tolerance.

Second.—It must be borne in mind that insulin, like fire, is a valuable agent and also may be a very dangerous agent. In other words, it can serve you well or destroy you. Therefore, it is wise to have a patient under such control and in skilled hands so that you may be able from time to time to observe any unfavorable results.

It has been the speaker's experience that a reaction almost never occurs, or if it does occur, it is mild if insulin is intelligently used; indeed, I have favored developing a mild reaction while in the hospital as a part of the patient's education.

Third.—The knowledge gained by the patient under the instruction of a dietitian is a most valuable aid to the control of the disease ever afterwards.

Fourth.—Most patients will be taught the importance of daily examination of the urine by the Benedict method as well as the proper technique in administering their own hypodermics, and will leave the hospital on a maintenance diet and capable of checking up their own cases, thereby having gained knowledge; and let it be remembered that the patient who understands the most in regard to diet as a controlling factor will live longest and get more out of life.

Just a word in regard to the dangers in the administration of insulin. It is a rule with the speaker to furnish every insulin case with the following slip and personally to see to it that he or she is well drilled in regard to these facts.

Patients Should Learn

1. Qualitative test for sugar in the urine.
2. Use of food scales.
3. To summarize carbohydrate, protein, fat and calories in diet for three meals.
4. What to eat when traveling.
5. What to do if sugar appears.
6. Hygiene: daily rests; avoidance of infections; care of skin and nails.
7. Prevention and treatment of acid poisoning.
8. In reporting to a physician, what to submit:
    - A. Weight—state whether dressed or naked.
    - B. Record of urinary tests.
    - C. Diet—carbohydrate, protein, fat and calories.
    - D. Insulin—total units and how divided through the day.
    - E. Portion of mixed and measured twenty-four hour quantity of urine.

For Patients Taking Insulin

9. Insulin is prepared in solutions of different strengths. Know your dose in units (not in cubic centimeters) and how to measure the amount of solution to give that number of units.
10. Syringe and needle must be boiled each time before using. Cleansing of the skin and the top of the bottle with alcohol is also necessary. Immediately after removing the needle, cleanse it with cold water.
11. An insulin reaction usually occurs in from 1 to 2 hours, but may occur as late as 6 hours after an injection, and can be recognized by the sudden onset of severe hunger, weakness, sweating, trembling, or pallor.
12. A reaction should be treated by eating an orange, or by taking the carbohydrate portion of the next meal.
13. At present it is not prudent to use insulin without daily examinations of the urine.
14. If your usual exercise is not obtained, on that day reduce your diet.
15. Arrange for a supply of insulin for ten days in advance.
16. If your supply of insulin fails:
    - A. Notify your doctor by telephone or telegraph, and
    - B. Omit one-third of your diet.

In the case that has received, through accident or otherwise, a dose of insulin to produce pronounced reaction, throwing the patient into coma, perhaps there is no better agent to administer than 7 to 10 minims of 1-1000 adrenalin solution. This will probably arouse the patient sufficiently so that he or she can take the usual antidote of orange, a piece of candy or some mashed potato, the response to which is truly spectacular. Further, the question has been raised as to whether or not the reaction might come on during the patient's sleeping period. I believe the teaching is that there is absolutely no danger of this happening as the reaction will always arouse the patient.

Let it be remembered that reactions take place any time from 30 minutes to six hours after administration of insulin.

Lastly, the question is asked by almost every case under treatment, "How long shall I have to take insulin?" and "Is my disease curable?" Now let me suggest that we answer the first question by stating that no one at present knows how long insulin shall have to be administered in any given case. I do know, however, that certain cases pronounced in type that were started on insulin early are now on a maintenance diet and have dispensed with their insulin. The fact is that this knowledge is encouraging and at least teaches us that the tolerance has been increased for carbohydrate. The second question may be answered by simply stating that certain scientific tests have demonstrated that probably changes in the pancreas, functional and organic, may be brought about by living within the proper limitations and the administration of insulin, and that therefore the bulk of the evidence now at hand is in favor of many cases approaching the normal carbohydrate tolerance. These statements, which I believe are true, will act as valuable props to the patient's psychic state.

A word in regard to the calculation of the dosage. The dosage should always be expressed in units and as insulin is now manufactured by Eli Lilly & Co., the standardization is known as U-10 and U-20, U-10 containing 10 units to the cubic centimeter and U-20 being double strength and containing 20 units to the cubic centimeter. I believe it is wise to select the largest dose of insulin for the heaviest meal of the day, let that be breakfast, lunch or dinner.

Let us not forget that a patient who is receiving insulin and reports to you as being habitually sugar free indicates that, if necessary, you should increase his diet, and if this is not indicated then you must diminish his amount of insulin. Such a case should, of course, at the earliest convenience be checked up by a blood sugar examination.

L. Leo Doane, Reporter.

LUZERNE—NOVEMBER-DECEMBER

The regular meeting of the Society was held in the Medical Building on November 7, 1923, and was called to order by President Schappert at 8:35 P. M.

Major G. R. McLean addressed the Society on the Community Welfare drive.

Congressman J. J. Casey and Miss Elliot addressed the Society on Disabled Veterans.

Dr. Robert N. Clark then read a very interesting paper on the subject of "The Schick Test and the Use of Diphtheria Toxin-antitoxin.

Dr. J. J. Kocyan reported a case of dicephalic monster with a lantern slide demonstration by Dr. Rynkiewicz.

The second regular meeting was held in the Society Building on November 21, 1923.

The following members were elected into the Society: Dr. Albert G. Gibbs, Nanticoke, Pa.; Dr. John J. Lavin, Ashley, Pa., and Dr. Howard A. Lichtenwalner, of Sweet Valley, Pa. Dr. Harry S. Seiwell, Superintendent of Retreat Hospital for the Insane, applied for transfer from the Madison County, Ill., Medical Society to the Luzerne County Medical Society. There being no objections, Dr. Seiwell was elected a member of this Society.

The nominating committee was then elected as follows: Drs. Schappert, Long, Whitney, Connole and Trapold, Jr.

The President then appointed as a committee to draw up resolutions on the death of Dr. H. M. Laing, Dallas, Pa., Drs. Grover, Chairman, Fischer and V. Edwards. Dr. Angelo L. Luchi then read a very comprehensive and interesting paper on "Diabetes and Tuberculosis; Problem of Treatment." This paper was discussed by Drs. Nealon, Bixby and Janjigian. The discussion was closed by Dr. Luchi.

The regular meeting of the Society was held in the Society building on December 5, 1923, at 8:40 p. m.

Dr. Drake then reported for the Program Committee that on December 19, 1923, Dr. A. J. Corson, Parsons, Pa., would read a paper before the Society.

The following were nominated for the various offices for the coming year:

President: Dr. J. E. Scheifly, Kingston.

Vice-President: Dr. S. M. Wolfe, Wilkes-Barre.

Recording Secretary: Dr. E. W. Bixby, Wilkes-Barre.

Financial Secretary: Dr. M. C. Rumbaugh, Kingston.

Treasurer: Dr. E. U. Buckman, Wilkes-Barre.

Censor for 3 Years: Dr. W. F. Danzer, Hazleton.

Director for 3 years: Dr. G. R. Drake, Plymouth.

Librarian: Dr. Lewis H. Taylor, Wilkes-Barre.

Editor of *Bulletin:* Dr. John B. Wolfe, Wilkes-Barre.

Reporter: Dr. H. Irvin Evans, Ashley.

The president appointed on the Banquet Committee: Drs. E. L. Meyers, chairman; Trapold, Jr., Grover and Bixby.

Dr. E. I. Wolfe then read a very instructive paper on "The Importance of Early Diagnosis and Treatment of Meningococcus Infection." This paper was discussed by Drs. Freeman, Baker, Janjigian, Croop and Meyers. The discussion was closed by Dr. Wolfe.

On December 15, 1923, at 8:30 p. m., Dr. Adolph Lorenz, of Vienna, Austria, gave a very interesting lecture in the Society Building. Subject: New Operation for the Relief of Irreducible Congenital Dislocation of the Hip. Ununited Fractures of the Neck of the Femur. Pathological Dislocation of the Femur and Allied Conditions.

H. Irvin Evans, Reporter.

MERCER—DECEMBER

The members of the Mercer County Medical Society celebrated the 80th anniversary of the Society at the Sharon Country Club, Sharon, Pa., on Thursday evening, December 6th, at 6:30 o'clock. The banquet hall was decorated with yellow pompon chrysanthemums and maiden hair ferns. At seven o'clock the members and guests marched into the dining room, where a delicious dinner was served. Music was furnished by Prof. Reese and his High School Orchestra, of Sharon. Dr. W. W. Richardson, of the Mercer Sanitarium, Mercer, Pa., President of the Society, was toastmaster.

Dr. James D. Heard, Professor of Medicine, University of Pennsylvania, gave an excellent talk on "Pregnancy As a Complication of Heart Disease." He said that "in the majority of cases a woman with heart disease can go through pregnancy, but pregnancy usually terminates itself at the end of eight and a half months. As a rule a therapeutic abortion is absolutely not called for because a woman has heart disease."

Dr. Harold A. Miller, Professor of Obstetrics, University of Pittsburgh, gave a most instructive talk on "Hemorrhages of Pregnancy." He used lantern slides. The following are some of the messages he left with us. Dr. Miller made it clear that a curette should not be used in a pregnant uterus on account of causing sepsis, to say nothing of puncturing the organ. Should some tissue be left after an abortion, if the patient is placed in a position to favor drainage, it will be expelled. There is nothing gained in packing for hemorrhage, as there is nothing for counter pressure. Packing docs often cause infection. A pregnant woman with a painless, causeless hemorrhage always means placenta previa and packing is useless. If manual dilatation is tried in placenta previa it often causes rupture of the organ due to the blotting paper consistency of the lower segment of the uterus. When a diagnosis of placenta previa is made, the patient should be sent to the hospital and pregnancy terminated, the same as in an ectopic pregnancy after it is diagnosed. Placenta previa patients die due to sepsis, air embolus or a ruptured uterus rather than from the hemorrhage. The sepsis is due to the repeated packings that are done by some.

Both Dr. Heard and Dr. Miller presented their subjects in a masterly manner and their talks were full of intellectual food.

There were guests from Crawford County Society, Lawrence County Society and from the Mahoning County Society, Ohio.

Edith MacBride, M.D., Secretary-Reporter.

ERIE—DECEMBER

The Erie County Medical Society met at the Lawrence Hotel on December 5th, for a dinner. Judge Hirt spoke informally to the members.

December 10th, Dr. A. Zingher, of New York, gave a most interesting talk on toxin-antitoxin and the Schick test to the members and all others who cared to come. He said in part that diphtheria is preventable.

In the Schick test a small amount of diluted toxin is injected intracutaneously. In the nonimmunes a positive reaction will appear at the site of the injection in from 24 to 72 hours. The subjects of these positive reactions are later given toxin-antitoxin, or in case of exposure to diphtheria they are given antitoxin at once. This latter gives protection for a brief period only, about two weeks. The antitoxin protein produced by the horse is not retained by man as it is when produced by him.

The positive reaction is recognized by a circumscribed area of redness and slight skin infiltration which reaches its height in three or four days and persists for from seven to fourteen days, and on fading, shows, as a rule, a superficial scaling and a slight brownish pigmentation. The amount of toxin injected for testing as advised by Schick is one-fiftieth of a minimum lethal dose for a guinea pig.

The immunes will show no reaction or possibly a pseudoreaction. The pseudoreactions are more prompt than a true reaction and show a larger area of redness and disappear within three days. They are due to the proteins and have nothing to do with the toxin. The best practice is to inject the toxin in the skin of one arm and the heated or antitoxin neutralized toxin in the other arm.

The usual 1 c. c. "Record" syringe with a 26-gauge needle ¼ or ½ inch long is preferred. You pick up the most superficial layer of the skin with the needle so that the oval opening is visible through the skin. Two-tenths c. c. of the proper dilution of the unheated toxin is injected in one arm and the same amount of the heated toxin is injected in the other arm, this latter is the control. The New York Health Department furnishes a standard diphtheria toxin in capillary tubes in such amounts that the contents of one tube added to a given quantity of sterile normal salt solution gives the required dilution.

It is better to Schick all children over six years of age. The toxin-antitoxin is given to all children under six years of age without the preliminary Schick test, because they are nearly all nonimmune after the first six or eight months of life. The children of the poorer classes are more likely to acquire an immunity than children more carefully reared.

The toxin-antitoxin is injected 1 c. c. for three doses a week apart.

Dr. Zingher did the Schick test for all the doctors and nurses present who wished it.

Anna M. Schrade, M.D., Reporter.

PHILADELPHIA

November 14th

The President, Dr. David Reisman, in the chair.

Symposium on Pneumonia

Dr. George E. Richardson: "Treatment of Pneumonia by Antibodies."—In this paper Dr. Richardson gave an account of the work done at the Philadelphia General Hospital with the antipneumococcic serum of Huntoon. This serum is made by injecting into horses types I, II and III, adding to the resulting serum living pneumococci of the three types, emulsifying, washing, introducing sodium bicarbonate and saline solution, heating at 55°C. for 1 hour and filtering. The serum contains antibodies and an indifferent protein. No typing of the sputum is necessary for its use. The treatment must be begun early in the disease, with the injection of 50 to 100 c. c. intravenously, or (preferably) 100 c. c. subcutaneously every 8 to 12 hours until the temperature is normal or below 100°F. Large amounts are often necessary. Given intravenously, there frequently results a six-hour chill lasting about fifteen minutes, with temperature increasing two degrees followed by a drop and a profuse sweating. One hundred c. c. given after the temperature is normal prevents a further rise. When given subcutaneously there is no chill. In Bellevue, N. Y., of those treated in this manner 21.4% died, as against 28.3% of those treated symptomatically. At Blockley last winter there were 32 cases of true lobar pneumonia with 20% mortality among those treated with the antipneumococcic serum and 40% among those not receiving it. Conclusions: It is of distinct value in early cases; there is a severe reaction when given intravenously, but subcutaneously it is safe; a large number of cases are necessary for any scientific conclusions.

Dr. Joseph Sailer: "Treatment of Pneumonia by Chemotherapeutic Methods."—Chemotherapy is produced by synthesis of a substance parasitocidal and scarcely organotropic, the method depends on trial and results vary. Ethylhydrocuprein has been over-urged, since the dangers counterbalance the benefits. While it renders the serum germicidal to the pneumococcus it is toxic, and may impair the vision or cause death. Mercurochrome, 1%, may be given intravenously, 5 c. c. per 20 pounds of body weight. This causes a reaction which is not dangerous and which lasts for 24 hours (vomiting, diarrhea and an elevation of temperature). It is especially beneficial in cases of hemolytic streptococcus. It has no effect on the kidneys in cases of nephritis. Treatment must be begun before the third day, with the patient carefully studied and the mercurochrome carefully prepared and administered. The treatment is safe and promising.

Dr. E. A. Locke, Boston: "Serologic Treatment."—No specific remedy stands the test in pneumonia, nor have there been accurately controlled observations or scientific investigations. Passive immunity has been tried, but since there are no circulating exotoxins in pneumonia this method failed. In 1897 an immune serum specific for the disease was sought, and the opsonin and agglutinin theories were advanced early in this century. The four types of pneumonia were studied and classified. Animal experimentation for the production of pneumonia often resulted in a septicemia, but intrabronchial injection or injection between the rings of the trachea was necessary to produce a true lobar pneumonia, thereby establishing its bronchogenic origin. Blake and Cecil found that subcutaneous inoculation with pneumococcic vaccine does not prevent subsequent infections but so modifies the course that no septicemia ensues. In their studies on passive immunity they demonstrated that type I antipneumococcic serum is specifically therapeutic in type I. The type III serum gives negative results, while type II is less satisfactory than type I. In giving this serum, the patient's reaction to horse serum should first be tested, and a desensitizing dose (.5 to 1 c. c.) of horse serum should be administered one hour before the serum is to be given. There is a thermal reaction in one hour, and serum sickness, with redness, tenderness and swelling of the joints and a high temperature, may set in 7 to 10 days afterwards. Urticaria may follow but is not dangerous. The Rockefeller Institute reports very good results from the serum, while in the Boston City Hospital there is a small per cent of favorable results. No cases had further lung invasion after the serum treatment. The serum may be effective at any time in the course of the disease if the blood is sterile. It is of no value in bacteriemia. Of the cases of type I lobar pneumonia treated with serum in various hospitals, the mortality figures ranged from 9.2 to 20%. The figures in the cases not treated in this way ranged about the same. A more precise method for selecting cases for type I serum is necessary. In speaking of the antipneumococcic serum of Huntoon, Dr. Locke reported from work done by Cecil and Baldwin, a mortality of 16.3% in 49 treated cases, as compared with 35.8% mortality in 53 untreated controls. Doses of 100 to 200 c. c. were given every 10 to 12 hours every two or three days, making an average dose of 650 c. c. Given subcutaneously there is no serum reaction, no anaphylaxis (since the horse serum is eliminated) and the serum is polyvalent. In group IV the mortality is less than 4.5%.

Dr. S. Solis-Cohen: "The Use of Drugs in the Treatment of Pneumonia."—In the administration of drugs in medicine it is always necessary to individualize, and there are two cardinal principles to be followed: 1. There must be no unnecessary interference with the natural processes; 2. We must be sure that good and not harm is being done. "Lung fever" is a better term than pneumonia, since we must deal with a general toxemia as well as with local pathology. In the exudate formed in pneumonia there is a poison, which, injected into animals, cases death by convulsions. If these animals have previously been treated with quinin they survive from one to six days. Cole's pneumotoxin shows the same phenomenon. Something in the quinin molecule opposes in some way some of the pneumonic poisons, and while quinin salts, pneumotoxin and the toxins of pneumonia are all hemolytic, applied simultaneously there is no hemolysis. Clinically, in the normal person large doses of quinin produce the familiar syndrome of cinchonism or possibly death, while in pneumonia this drug is well borne. In certain cases of highly virulent type IV cinchonism may be present and death invariably results. In type I the following drugs are effective in the order named: 1, ethylhydrocuprein (too toxic for use); 2, quinin hydrobromide; 3, mercurochrome; 4, quinin and urea hydrochloride; 5, quinin hydrochloride. In cases of hemolytic streptococcus the toxins are neutralized by ethylhydrocuprein in dilution 1 : 10,000; by mercurochrome in dilution 1 : 50,000; by quinin and urea hydrochloride 1 : 15,000; by quinin dihydrobromid 1 : 12,000. Quinin salts in the human body lose very little, or may increase in pneumococcocidal and static properties. Given before the third day of the disease the mortality is low, after the 7th, high. The effect of a drug must be adjuvant, substitutional, imitative or supplementary. If the drug is indifferent to natural reactions but increases comfort or prolongs life so that a natural reaction has a chance to set in, it is good. Digitalis to sustain the heart, pressor agents, sedatives, eliminants all play a part in pneumonia. Morphin must be avoided, as it tends to decrease kidney action.

In Discussion.—Dr. Thomas McCrea stressed the importance of the subcutaneous injection of antibody serum and said that death in pneumonia is frequently due to some condition previously existing. He has observed no effect from quinin and believes that morphin is strongly indicated in pneumonia, nor has he ever seen evidence of its effect on the kidneys.

Dr. John Kolmer deplored the great ignorance on this subject. In searching for the factor that kills the pneumonia patient he finds: 1, the poisons produced by the pneumococci; 2, poisons produced in the inflammatory exudate, a protein split product for which there is no therapeutic agent. Huntoon's antibody solution is very effective against the organisms and their toxins and will clear the blood stream of organisms and prevent further extension in the lung. Chemotherapy has as yet yielded nothing. Some new compound of quinin may be found selectively to destroy the pneumococcus. Subcutaneous injections of antibody solution and quinin should be given. The protein poison in the inflammatory exudate should be investigated.

Dr. Huntoon stressed the early treatment of pneumonia and said that a delay in typing is criminal. The antibody solution prevents the formation of a septicemia from a lung focus.

Ergot, by its property of contracting the vessels in the lung and thereby eliminating culture ground for the organisms, was named as an important drug in this disease. Prevention of pneumonia transmission by tonsillar infection was urged.

In closing, Dr. Sailer said that the selection of the remedy must depend upon clinical results, and not on laboratory convictions, and Dr. Solis-Cohen urged the careful symptomatic treatment and observation of the patient.

November 28th

The President, Dr. David Reisman, presiding.

The Value of Physical Chemistry and Biochemistry in Clinical Medicine and Surgery

Dr. Harold Austin: "The Acid-Base Equilibrium in Its Practical Applications."—The factors involved in the acid-base equilibrium are three: 1, the quantities of bases and acids; 2, the kinds of bases and acids; 3, the resulting reaction. In the body fluids the total amount of base per liter of water is strikingly constant, thereby giving a constancy of osmotic pressure in the body fluids. The bases involved vary with the tissues—potassium, sodium, etc. The acid radicals, on the other hand, are not constant. For example, take the blood. The concentration of protein is determined by factors little understood. The concentration of the phosphoric, sulphuric and chlorine groups is controlled by excretion through the kidneys (in small degree also through the intestine and skin), and the adjustments are limited in rapidity. The elimination of carbonic acid, however, is very great. Carbonic acid is variable and takes up basic radicals left in excess of other bases and acting as a readily adjustable equalizer. Because of this liable character it forms a convenient gauge of the acid-base balance. The base which remains bound to the CO_2 is called the "alkali reserve." The reaction of the blood depends on the ratio between the carbonic acid combined with base, and that which is free, in excess, the normal ratio being 1/20. Any fluid exhibits acidity or basicity only in water solution, by virtue of the dissociation of the components of water, H and OH. In pure water there is $\frac{1}{10,000,000}$ gm. hydrogen ions per liter. Alkali added increases the OH ions and decreases the H ions. The effect of the addition of different acids in the same concentration differs in the numbers of H ions set free, e. g.,

HCI N/10 ....1/10gm. H ions.
Acetic N/10 ....1/250gm. H ions.

(therefore acetic acid is called "weaker" than hydrochloric, because the strength of the acid is dependent upon the number of dissociated hydrogen ions). NaOH N/10 $\frac{1}{100.000,000,000,000}$ (one millionth of water). Enzymic action is related to the hydrogen ion concentration. H ion concentration is expressed (Sorensen's Method) by the logarithm of the denominator, e. g., water pH=7; HC1 N/10=1. The measurement of pH is simplest by the use of indicators, the two most used being methyl red and phenolsulphonphthalein, gradation of color indicating the pH. The pH of the blood is normally 7.4. The alkali reserve may be halved, but the carbonic acid expired keeps the reaction normal. Abnormal organic acids in the blood, acetone and diacetic in the urine, are the earliest evidences of disturbance in metabolism. True acidosis is a reduction or depletion of the alkali reserve. In the acidosis following anesthesia the pulse is increased, the blood-pressure lowered, there are restlessness, and symptoms of shock without hemorrhage or trauma, acetone and diacetic are more than is usually found in postoperative conditions. These patients do not show a decrease in the alkali reserve sufficient to warrant such symptoms, the acid-base equilibrium may not be destroyed. It is called acidosis by the urinary findings. Such cases are frequently treated by sodium bicarbonate. Is this rational? Better analyze the symptoms into the component factors in the acid-base equilibrium ketonemia, ketonuria, alteration in the alkali reserve, alteration in the reaction of the blood. Acidosis is too inclusive a term, and should be avoided.

Dr. Jose Ducci, Professor of Medicine, National University of Chile, S. A.: "Some Improvements in the Method of Electrical Pulse Recording."—Dr. Ducci in his work in the physio-biological laboratory has studied the various methods for making records, and believes that the electrical inscription should be adopted, since every phenomenon, sound movement, etc., can be transformed into electrical current and the electric current can be transformed into inscription through the use of a galvanometer of low resistance, and photography. A current too small for recording may be amplified without deformity. By use of a loud speaker and an amplified current a sound characteristic, for instance, of a certain venous pulse may be produced. This opens new possibilities. A sphygmoscope microphone or capsule is used in recording pulse. The rôle of the diaphragm in circulation has been determined by this method, and pulses heretofore unobtainable (e. g., ocular) can be recorded. Dr. Ducci demonstrated slides comparing the radical, venous and ocular pulses as recorded by his instruments.

Dr. A. N. Richards: "Urinary Secretion."—Dr. Richards stressed the importance of the relation of biochemistry and physico-chemistry to clinical medicine. His experiments have been directed towards the problems of urine formation. There have been two theories of urine formation: 1, the filtration hypothesis which states that the force of the heart (blood-pressure in the glomerular capsule) causes the excretion of a protein-free fluid which is elaborated in the tubules by water; 2, the secretory theory, which states that tubular and glomerular epithelium have a secreting power (beyond the power of physics and chemistry to explain). Experimentally it was proved that when the blood-pressure in the renal circulation is raised—through stimulation of the skin, sympathetic nerves, injection of adrenalin or pressure on the renal vein—the urinary output is increased. Therefore pressure is an essential factor in the formation of urine and one of the essential processes is filtration. In a second set of experiments, direct observation of the blood vessels in a living frog's kidney and of the glomerulus at work, was made. The glomerular capsule was entered with a pipette and fluid withdrawn. Comparison with the blood plasma showed that when the blood plasma contained sugar under .05% the glomerular fluid contained sugar and also NaCi. The bladder urine contains no sugar and no sodium chlorid. Therefore, while the glomerulus eliminates chlorides and sugar from the blood there is another conserving process taking them back (probably reabsorption in the renal tubules). The glomerular process is physical and supports the filtration hypothesis. A third set of experiments subjected the glomerular fluid to quantitative analysis, and an analysis of chlorid concentration ran as follows:

Blood plasm	.35%	.38%	.32%	.30%	.30%
Glomerular urine....	.44%	.45%	.43%	.33%	.43%

There was found to be a constant difference, with the chlorid concentration higher in the glomerular fluid than in the blood plasma. Are there laws in physical chemistry to explain this? If the blood, with its protein, sodium chlorid, sodium, chlorin and bicarbonate, is placed on one side of a membrane impervious to protein, will the dialysate contain a greater concentration of sodium chlorid? In glomerular activity, diffusion, osmosis and filtration must all be considered. Sodium chlorid may lower surface tension when in contact with a solid surface, although in contact with air it has no effect on the surface tension of water.

Discussion was opened by Dr. Edward Ludholz, who stressed the importance of fitness of the environment in studying physiobiological reactions.

Dr. Withrow Morse said that in studies on autolysis immediately after death he found an instantaneous rise of acid, and less than one minute's loss of blood in the kidney causes rise in acidity and self digestion. The acid-base metabolism must figure in the operation of the body enzymes present in all tissues. It was reported from the Van Slyke laboratories that in the crisis of pneumonia there is a digestion of the exudate, but neither before, during or after the crisis is there a change in the acid-base equilibrium. Addition of proteins to the blood (thereby increasing colloids) improves cases of parenchymatous nephritis by holding substances in the blood.

MARY A. HIPPLE, M.D., Reporter.

SOMERSET—NOVEMBER

The last regular meeting of the Somerset County Medical Society for the year 1923 was held on November 20th. This was settlement day for the year, and reports of all the officers and committees were gratifying and were approved. The attendance was larger than usual, which bespeaks more than usual interest in the work of the society.

A very pleasant and profitable time was spent in promiscuous rehearsal of the year's doings and all resolved that the future meetings shall be still more beneficial than those of the past.

The matter of physicians' fees or charges was brought before the society, and an instance cited where the physician had charged in accordance with the fees established by the society. In fact his charges were scaled down far below the ordinary charges for such service and were not exhorbitant. This was a case where compensation is allowed or required by law to injured persons and brought out some lively discussion, but it was thought that all we could do was to stand by the physician in his efforts to obtain the full amount of this reasonable bill. Efforts will be made to right this wrong.

This was election day, but that fact did not bring out near half the members. The vote, however, was unanimous for each candidate. Dr. H. A. Zimmerman was elected president and Dr. M. U. McIntyre, vice-president. The treasurer, Dr. Carl W. Frantz, was reëlected, having been treasurer ever since the beginning of 1919. Dr. H. C. McKinley was reëlected secretary, having held this office ever since the organization of the society in 1889, and at this meeting made his 34th annual report. This is perhaps the longest secretarial service of any medical society in the state. Secretary McKinley is now past 83 years of age and but for a serious accident that occurred to him soon after the A. M. A. meeting in California last summer, would be as active as any other member. His report is appended:

REPORT OF THE SECRETARY OF THE SOMERSET COUNTY MEDICAL SOCIETY FOR THE YEAR 1923

To the Officers and Members: Another year of opportunities, privileges and responsibilities, whether properly used or abused, another of duties well performed or neglected has passed since our last report. How rapidly the days of the year have fled; faster it seems to one of mature age, than the tick of the grandfather clock.

How well these opportunities have been used, how well the duties have been preformed rests with each member. The future is not in our keeping in which to perform our duties, honor our profession and relieve suffering humanity. We do not know its limits, as we have a striking and sorrowful evidence in the passing of our fellow member, Dr. Charles P. Large, of Meyersdale, in the prime of his life and usefulness. He was a faithful, active member of this society, using his best efforts for its success. He had also been for a number of years the efficient County Medical Director. He battled hard against the "Grim Monster" in behalf of others and himself victoriously, until weakened in body he finally, on the 26th day of February, bade a last good-bye to all that was dear to him on earth. We should be profoundly thankful that not more of our members have been called away during the year.

The meetings have been better attended during the year than has been the case for a number of years and good results have ensued. May it continue to be so.

Your retiring secretary desires to thank all who have in any way given him assistance in his work, which he has endeavored to perform for the best interests of all the members and the society in general, and bespeaks for his successor the same cordial support.

One new member was received during the year, Dr. Hugh Morrow, of Elk Lick. Only two other eligible physicians in the county are still not members. An effort should be made to get them in.

There is one physician practicing illegally in the county. He is closely related to one of the members of this society and there has been some hesitancy on the part of our censors to push a prosecution, feeling that such matters should be taken up by the Board of Medical Examination and Licensure, where they properly belong, and as some action was taken in that direction at the last State Society meeting in Pittsburgh we look for the enforcement of the laws. Your secretary requests that all possible aid be given to the proper authority in prosecutions of this character.

Your retiring secretary wishes each and all the members and their dear ones peace, prosperity and plenty during the coming year and a very happy holiday season, Respectfully submitted,

H. C. McKinley, Secretary.

WARREN—OCTOBER-NOVEMBER

The October meeting was attended by an average number of members. Dr. Schmehl discussed the Schick test and the need for immunizing against diphtheria. A representative from the State Health Department explained the methods of organizing campaigns for immunizing pre-school children, and the society went on record as favoring such a program. It is understood that funds from the Sheppard-Towner appropriation are available for furnishing toxin-antitoxin free to all physicians who desire to use it.

Dr. Ball gave a report of the State Society meeting, and also spoke of the preventive measures employed in several cities against goiter. The use twice a year for a few weeks of sodium iodid among adolescent girls has resulted in marked lessening of goiter wherever this has been systematically employed. In some places the iodin has been added to table salt and also it has been put into the drinking water for a short period.

Warren is in the goiter belt, and also, owing to the fact that a large settlement of Swiss people was made here, we find many of their descendants affected. The form is mostly of the simple kind.

Dr. Chapman acted as host for the October meeting.

The November meeting was in charge of the staff of the State Hospital for the Insane.

Dr. Crane gave an interesting review of the development of obstetrics. Because men were not permitted to be present at an obstetric delivery, midwives, up to a recent period, were wholly in charge of this field of medicine. In 1513 a treatise for midwives was published and is one of the earliest works on the subject. The important advancements in obstetrics were briefly outlined.

Dr. Africa reported a case of complete inversion of the uterus following immediately after delivery of the child and before the placental delivery. The patient was a primipara. No traction had been made and pituitrin had not been used. The rapid detachment of the placenta, and pituitrin, aided by manipulations, caused the reduction of the uterus, and final recovery resulted without any further incident. Dr. Africa said the condition was very rare.

Dr. Ottobine gave a synopsis of diseases of the thyroid, and stated that at the Geisinger Hospital, Danville, surgical procedures—ligation and thyroidectomy—had brought about the best results in the exophthalmic and toxic types. Considerable attention must be paid to the preparation of such patients preliminary to operation.

Dr. Darling demonstrated the use of a simple apparatus for obtaining basal metabolic measurements. He explained how important it is to have the conditions standard. The temperature and barometric conditions of the surroundings, the previous preparation of the patient and several other factors must be taken into consideration before a basal metabolism reading can be valued properly.

The members were treated to a buffet luncheon, seventeen members being present.

M. V. Ball, Reporter.

PENNSYLVANIA NEWS ITEMS

DEATHS

Dr. William R. Paules, of Danville, who was graduated from Jefferson Medical College of Philadelphia in 1890, died on November 26th. He was born in 1863.

Dr. Bernhard Segal, of Philadelphia, died on November 26th. He was born in 1868 and was graduated from Jefferson Medical College of Philadelphia in 1893.

Dr. Ira Wellington Chapman, of Pittsburgh, who was born in 1876, and was graduated from the School of Medicine of the University of Pittsburgh in 1904, died on November 23d.

Dr. Edward F. Hilferty, of Philadelphia, who was born in 1872, died on November 25th. He was a graduate of Temple University Department of Medicine, Philadelphia, Class of 1906.

Dr. Eleanore M. Hiestand Moore, of Philadelphia, who was graduated from the Woman's Medical College of Pennsylvania, Philadelphia, in 1890, died on November 29th. Dr. Moore was formerly demonstrator of chemistry at her alma mater.

Dr. Robert Vance Stewart, of Monongahela, aged 43 years, died on November 12th of cardiorenal disease. Dr. Stewart was a graduate of the University of Pennsylvania School of Medicine, Philadelphia, class of 1905, and was on the staff of the Memorial Hospital.

Notice Has Been Received of the recent death of Dr. Harry Somerville, of Chest Springs, who was on the medical and surgical staff of the Miners Hospital, Spangler. Dr. Somerville was born in 1868, and was graduated from the Cincinnati College of Medicine and Surgery in 1888.

Dr. David R. Beaver, of Conshohocken, the oldest practicing physician in Montgomery County, died of bronchopneumonia on November 17th, at the age of 81 years. He was a graduate of the University of Pennsylvania School of Medicine, Philadelphia, in the class of 1864, and was a veteran of the Civil War. He is survived by two daughters and two grandchildren.

Dr. James Cheston Morris, of West Chester, a Civil War veteran, died on November 29th of heart disease at the age of 92 years. Dr. Morris was a graduate of the University of Pennsylvania School of Medicine, class of 1854, and was examiner and lecturer at his alma mater from 1855 to 1863. At one time he was curator of the American Philosophy Society, and he was also director of the biologic and microscopic department of the Philadelphia Academy of Natural Sciences.

DR. JOHN WANAMAKER, III, of Philadelphia, nephew of the late John Wanamaker, died on November 17th, following an illness of several months. He was forty-seven years old and was a graduate of the University of Pennsylvania School of Medicine in the class of 1899. Dr. Wanamaker practiced medicine for ten years after his graduation and later became associated with the Wanamaker Store as one of its managers. In 1904 he was appointed Police Surgeon, which position he held for thirteen years. His widow survives him.

DR. J. R. V. WOLFE, of Norristown, aged 42 years, died on November 17th, following an appendectomy. Dr. Wolfe was graduated from Jefferson Medical College of Philadelphia in 1911. During the World War he was a captain in the Medical Corps at Fort Oglethorpe, Georgia. He was later promoted to major and was given charge of the x-ray work at Camp Upton, Long Island. At the time of his death he was in charge of the x-ray work at the Montgomery Hospital. Besides his widow he is survived by three small children.

DR. W. CLIVE SMITH, aged 55 years, who was exceptionally prominent as a specialist in children's diseases, died on December 11th at his home in Wilkes-Barre from embolism. Dr. Smith was born at Blossburg in 1868, and was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1893. He was resident physician at the Pittston Hospital and the Wilkes-Barre City Hospital, and also served in the Nursery and Childrens' Hospital of New York. At the time of his death he was chief of medical service of the Wilkes-Barre City Hospital, on which staff he served for the past twenty years. He was also chief surgeon for the Lehigh and Wilkes-Barre Coal Company.

BIRTHS

BORN TO DR. AND MRS. G. W. MUFFLY, of Turbotville, on December 14th, a daughter, Betty Ann.

DR. AND MRS. CHARLES KEPHARTE MURRAY, of Pittsburgh, have announced the birth of a son, Charles Kepharte Murray, Jr., December 2d.

DR. AND MRS. SAMUEL HORTON BROWN, of Cynwyd, are receiving congratulations upon the birth of a son, James Linnane Brown, November 25th.

MARRIAGES

MISS ELIZABETH JOSEPHINE TRACY, of Conshohocken, and Dr. Donald John McCormick, of Pottsville, were united in marriage on Thursday, December 27th.

ANNOUNCEMENT HAS BEEN MADE of the marriage of Dr. J. Spencer Callen, of Shenandoah, and Miss Minnie J. Hancock, of Shamokin. The wedding took place on Thanksgiving Day.

ITEMS

DR. S. E. BATEMAN, of Philadelphia, has announced the removal of his office to 47 South Windsor Ave., Atlantic City., N. J.

DR. GEORGE BARNETT, of Johnstown, was admitted as a Fellow of the American College of Surgeons at their recent meeting in Chicago.

DR. JOHN R. ROSE, of New York, has been elected superintendent of the Norristown State Hospital. He was one of seven applicants for the position.

DR. LUTHER C. PETER, of Philadelphia, addressed the Lancaster County Medical Society at their December meeting on "The Interpretation of Eye Symptoms Encountered in General Practice."

DR. JOHN A. LICHTY, who has been an active practitioner in Pittsburgh for a number of years, has accepted the superintendency of the Clifton Springs Sanitarium, Clifton Springs, N. Y.

DR. O. G. A. BARKER AND DR. C. M. HARRIS, of Johnstown, attended the meeting of the American Academy of Ophthalmology and Otolaryngology held in Washington, D. C., during the month of October.

DR. JOHN B. LOWMAN, of Johnstown, who was serious injured in Pittsburgh, while attending the annual meeting of the State Society, has recovered sufficiently to be discharged from the hospital and has returned to his home. Dr. Lowman's convalescence has been very satisfactory and he has practically recovered from his injury.

THE ANNUAL CONFERENCE of the Pennsylvania Tuberculosis Society will be held in Harrisburg, January 15-17, 1924, with headquarters at the Penn-Harris Hotel. A splendid program has been arranged, and many prominent people have been secured to speak at each session. Physicians, nurses, health and social workers (public and private), interested citizens and teachers will all be welcome.

DR. FLORENCE E. KRAKER, of Philadelphia, who has just returned from a year in China, where she was on the teaching staff of the Margaret-Williamson Hospital at Shanghai, has been appointed specialist in maternal hygiene in the Children's Bureau of the U. S. Department of Labor. Dr. Kraker will also be associate director of the maternity and infancy division of the Children's Bureau, which has immediate direction of the Federal maternity and infancy act.

THE AMERICAN SOCIETY for the Control of Cancer has designated the period between March 15th and April 14th as the time for the cancer campaign in Pennsylvania. The purpose of these campaigns is to afford the initial impetus for continued and sustained effort throughout the year. It is not expected that the same intensive work will be done that characterized the two national cancer weeks, but it is hoped that more extensive work will be accomplished and the groups and individuals not formerly reached will, during these longer campaigns, receive the message.

COMMENCEMENT EXERCISES of the Training School for Nurses of the Mercer Sanitarium, Mercer, Pa., were held at the Sanitarium on Friday evening, November 23rd, at 8 p. m. Three nurses were graduated. Addresses were given by Dr. W. W. Richardson, Medical Director of the Sanitarium, and Dr. Sandy, of the State Welfare Department, Harrisburg. The Sanitarium was attractively decorated with flowers, and music was furnished by an orchestra. After passing the receiving line the guests assembled in the spacious dining room where a delicious repast was served. Dancing followed.

GENERAL NEWS ITEMS

The well-known firm of Burroughs Wellcome & Company have recently removed to their new building at 9-11 East Forty-first St., New York City. They extend a cordial invitation to the medical profession to visit their new exhibition rooms, and also to make use of the information which has been developed through their researches and experimental investigations.

UNITED STATES PUBLIC HEALTH SERVICE ISSUES ANNUAL REPORT

"To meet the growing demands of American shipping and to reduce serious fire hazards due to antiquated buildings, new Marine hospitals are urgently needed," says Surgeon General Hugh S. Cumming in the 52nd Annual Report of the United States Public Health Service, for the fiscal year ended June 30, 1923. This report, covering the one hundred and twenty-fifth year of the existence of the Public Health Service has just come from the press.

While stressing the need for new Marine hospitals and the difficulty of securing medical officers for the regular corps of the Public Health Service, the Surgeon General states that "sanitary reports indicate that general health conditions throughout the United States have continued as satisfactory as in recent years. An increasing interest in Public Health improvement has been noted.

"In these reports, year after year, it is interesting to note the shifting of emphasis, which is due in part to progress in medical science." The present report for 1923 shows that the plague work, which has heretofore been the subject of much consideration in the annual reports has, temporarily at least, practically faded from the picture. Both human and rodent plague appears to have been eradicated in the United States except for infected ground squirrels in California and all anti-plague measures in other states have been discontinued.

We are warned, however, that owing to the difficulty of completely exterminating rats on board vessels and the present wide-spread dissemination of plague, geographically, there is constant danger of the introduction of this disease at all seaports engaged in foreign trade.

While typhus, plague and yellow fever have been reported from countries with which the United States has been in constant communication, because of the enforcement of international sanitary agreements and the maintenance of national quarantine systems, no cases of major, quarantinable diseases have gained access to this country within the year covered by the report.

Twenty-five hospitals are now operated by the Public Health Service, including the National Leprosarium at Carville, Louisana. Great advancement in the hospital standards of the Public Health Service is noted. At the same time, there has been a reduction in the per-diem cost.

A novel feature of the present report is the section which deals with the use which the Public Health Service is making of radio, for the dissemination of popular health information and the stimulation of a wider interest in general health matters.

The United States Public Health Service was the first national health agency to utilize radio for this purpose. The beginning of its radio activities dates from July 13, 1921. The actual cost to the Bureau for maintaining its Radio Information Service has been insignificant.

PROPAGANDA FOR REFORM

C-O-M Not Accepted for N. N. R.—The Council on Pharmacy and Chemistry reports that "C-O-M" is the proprietary, noninforming name under which the H. D. Frees Co., Chicago, exploits a preparation which is claimed to be the solution of magnesium citrate of the U. S. Pharmacopoeia but to have the advantage over the official preparation in that it keeps indefinitely. The Council refused recognition to "C-O-M" because 1. The application of a proprietary name to a pharmacopoeial article is irrational and a detriment to rational therapy; 2, as solution of magnesium citrate is readily prepared fresh and of standard quality by pharmacists, the claim of stability is not a sufficient, warrant for the use of a proprietary name for an official article; 3, th therapeutic claims for C-O-M are unwarranted, and 4, the advertising propaganda is likely to lead to the excessive and ill-advised use of the preparation by the public. (*Jour. A. M. A.*, Aug. 11, 1923, p. 493).

Collosol Calcium.—E. E. Prest (Brit. Méd. J., Jan. 14, 1922) recommended a new "collosol" brand of so-called colloidal calcium for the treatment of tuberculosis. T. C. Graves (Lancet, Nov. 4, 1922) discussing "Colloidal Calcium in Malnutrition, Chronic Sepsis and Emotional Disturbances." The publications of Prest and Graves serve as uncritical endorsements of another addition to the Collosol preparations. The conclusions reached by Graves concerning the beneficial action in the treatment of "Emotional Disturbances" do not seem justified by the character of the evidence he presents. Such results as he reports are common experiences without the use of medication. There is no basis, either in theory or in the evidence presented, for administering a calcium salt in colloidal form; if advisable, soluble compounds of calcium such as the lactate and chlorid may be administered hypodermically. Thanks to the timely report of the Council on Pharmacy and Chemistry, the Collosol preparations are not being pushed in the United States though they are being actively exploited in England. (*Jour. A. M. A.*, Aug. 4, 1923, p. 409).

Iodin as a Prophylactic for Goiter.—The conclusion of Marine and Kimball that the administration of iodin constitutes an efficient and safe method of preventing goiter is being amply confirmed. In Switzerland the results appear even more favorable than those reported in this country and the goiter commission of Switzerland has recommended that this method of goiter prevention be instituted as a public health measure throughout the republic. In this country the schools of Akron, Kent and Revana counties, in Ohio, have been using the method as a routine. It has been employed in Berea and Warren, Ohio, and extensively administered in some of the large factories in Cleveland. This year the schools in East Cleveland, Shaker Heights, Warren, Niles and Findlay, Ohio, Grand Rapids, Mich., and Hammond, Ind., are using tablets, each containing 10 mg. of iodin in the form of an organic iodid and each girl takes one tablet a week throughout the year. (*Jour. A. M. A.*, Aug. 18, 1923, p. 582).

Administration of Iodid for Goiter.—For the prophylaxis of goiter, Marine and Kimble employed 2 gm. of sodium iodid given in 0.2 gm. doses daily for ten consecutive school days. This was repeated twice yearly. Marine and Kimball state that this amount of iodid is excessive and that 1 gm. of sodium iodid distributed over a longer period would be better. Sodium iodid may be prescribed in solution, a dose to a teaspoonful. If the patient be furnished with a small quantity of potassium iodid—say 1 gm.—and advised to mix it thoroughly with 1 kg. of ordinary table salt for occasional seasoning of his food at the table, he will get all the iodid that is necessary.

Two More Electronic Diagnoses.—A physician reports that one of his patients became alarmed by a diagnosis of generalized carcinoma made by an osteopath who is a disciple of Albert Abrams. In order to test the diagnostic ability of this disciple of Abrams the physician had the patient send the Abrams disciple a specimen of blood (which was taken from a young rooster who had been confined to his coop since birth) for diagnosis. The diagnosis which was received showed syphilis, gonorrhea, generalized carcinoma, sarcoma of the spine, chronic malaria and diabetes. Another physician reports a diagnosis made by an Abrams follower on a man who is working and by no means ready to die. The diagnosis showed "diminished resistance" (an Abrams euphemism for syphilis), "carcinoma of gall bladder," "streptococcus," "sarcoma of both kidneys, right worse," "tuberculosis both lungs, upper right and middle left," "sarcoma," "gallstones," "malaria," and "pneumonia." (*Jour. A. M. A.*, Aug. 11, 1923, p. 493).

PERIODIC EXAMINATION RECORD*

Case No. ....

Name .... Age .... Height ...... Weight ..... usual ...... present ...... normal ......

Temp. (3 min.)..... Pulse Rate { Seated (before exercise) ....
Standing (before exercise) ....
60 sec. after exercise (sufficient to increase pulse to 110) ....

Bl. Pres.: Sitting { Sys. .... Dias. .... Lying { Sys. .... Dias. ....

Hearing { R. .... L. .... Vision { R. .... L. ....

Urine: Color .... Reaction .... Sp. Gr. .... Alb. .... Sugar ....

1. (Standing)

Posture: erect .... stooped ....lateral curvature ....
Superficial glands: cervical .... axillary........... inguinal .... epitrochlear ....
Abdomen: flat ....pendulous ....
Legs: knock knees .... big veins .... scars ....
Feet: flat .... painful .... deformed ....
Skin ....Hands ....
Nutrition ....Hernial Rings ....
Chest: expir. .... inspir. ....Romberg ....

2. (Sitting)

Scalp ....Patellar reflexes ....
Eye reflexes ....to light.......................to distance ....
Nose: conformation .... air passages free .... obstructed .... discharge ....
Teeth: caries .... devitalized .... crowned ....
Gums: healthy .... retracted .... inflamed ....
Tongue: clean .... coated .... moist .... dry ....
Pharynx: ulcers .... scars .... tonsils ....
Ears: conformation .... discharge ....
Heart: locate apex (measure from mid-line—state interspaces) .... character of sounds ....
Lungs: abnormal findings ....

3. (Lying)

Abdomen: palpation .... tender .... tumors ....
Liver: percussion .... tender .... palpable ....
Spleen: percussion .... tender .... palpable ....
Kidneys: palpable .... tender ....
Anus: inspection .... digital findings ....

4. Summary: defects of function and structure and errors of habit ....
....
....
....

5. Advice given to the patient ....
....
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....
....
....

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*Prepared by the Committee on Public Relations of the Medical Society of the State of Pennsylvania.

HISTORY

(This side to be filled in by the person to be examined)

1. Name .... Country of birth .... Date of birth ....
2. Address .... Race ....
3. Single, married, widowed, divorced? ....
4. Occupation ....
5. How often have you changed your work? .... Why? ....
6. Is your work dangerous or unhealthy? ....
7. Is it indoors or out? ....
8. Is it light where you work? ...... Dark? ...... Dusty? ..... Smelly? ..... Noisy? ..... Crowded? .....
9. At work are you usually seated, standing, or walking? ....
10. How many hours a day do you work? .... How many days a week? ....
11. Have you a room and bed to yourself? .... With window open? ....
12. What are your hours of sleep? .... Is your sleep restful? .... By what is it disturbed? ....
13. Where do you eat your meals? ....
14. How much time do you take for each meal? ....
15. Of what foods are you especially fond? ....
16. How much do you drink daily of:
    Water ....Tea ....Soft drinks ....
    Milk ....Coffee ....Alcoholic drinks ....
17. Do you eat candy? ....
18. Do you have a bowel movement daily without the use of drugs? .... What laxative do you use? .... How often? .... Do you have pain or bleeding with bowel movement? .... How often? ....
19. Have your menstrual periods been regular? ....
20. Have they interfered with your usual occupations? ....
21. Have pregnancies and confinements been free from accidents? ....
22. How often do you bathe? ....
23. What regular exercises do you take in addition to your work? ....
24. Do you share in church, social, political, club or trade associations? ....
25. What are your pleasures or recreations? ....
26. Have you had any of the following diseases and at what ages?
    Tuberculosis ....Scarlet fever ....Tonsillitis ....
    Malaria ....Diphtheria ....Frequent colds ....
    Rheumatism ....Typhoid fever ....Syphilis or gonorrhea ....
27. Do you have dyspepsia? ....
28. Do you have headache? ....
29. Are you short of breath on going up stairs? ....
30. Do you catch cold easily and often? ....
31. Are you subject to sore throats? ....
32. Have you been vaccinated against smallpox, typhoid fever, diphtheria? .... When? ....
33. Have you had any accidents, broken bones or surgical operations? ....
34. How often do you consult your dentist? ....
35. Are you as well at present as formerly? .... If not, why? ....
36. Do you remember any important diseases of your parents or family which may have affected your own health? ....

Remarks ....

....

....

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THE

MEDICAL SOCIETY OF DELAWARE

PRESIDENT'S ADDRESS

THE IDEAL PHYSICIAN*

DORSEY W. LEWIS, M.D.

MIDDLETOWN, DEL.

Fellow Members of the Medical Society of Delaware:

For the great honor of being chosen your presiding officer for this, the 134th Annual Session of this ancient and honorable organization, I tender to you my most grateful thanks, assuring you of my deep appreciation, fully realizing that it shall ever be to me a cherished memory. It is a source of profound satisfaction to me to have been judged worthy of this distinction by you. At the same time I feel a keen sense of my own shortcomings—for all of which I shall rely upon your kind consideration.

Were I to begin to review the work of this organization for the past year, I fear that my story would soon be told, but from the nature of our organization, being built up from the county societies and having only one meeting a year, naturally the good things accomplished by us and worthy of record, must be reported by the officers from the component parts of our state organization.

However, since our last meeting the Legislature has been in session and an act was passed which provided for the amalgamation of the State Board of Health, the Child Welfare Commission and the State Tuberculosis Commission, to be known as the Commission of Public Health and Welfare. By this consolidation we feel that a great public good has been accomplished, and it was due in a large part to the untiring efforts of a committee from our membership, working under the guidance of our Medical Society.

The point for which the physicians stood in this act, was that the medical affairs of the state should be controlled by the medical profession—a not unheard of and not unreasonable demand. The bill as passed was a compromise bill, but carried with it the appointment by the Governor of four physicians on a commission of seven members.

Governor Denney requested the medical societies of the state to give him a list of physicians who would be acceptable as members of the new Commission, leading us to believe he would honor our recommendation, but we believe he failed to name a single physician on the Commission that was selected by the organized profession. We believe that, contrary to the intent of the law as enacted, the Governor was influenced from sources outside of the organized profession in the appointment of the medical personnel of the Commission, thereby making a direct slap at our medical organization. In spite of this, because of the medical control of the Commission, we expect and believe we shall have more efficient, economical and scientific administration of the new Commission's affairs.

Other than this legislative work I believe there have been no activities of the State Society since the last session.

Having decided not to incorporate any scientific subject into our paper to-day, and not knowing how better to address you, we are going to ask you to bear with us, while we picture "The Ideal Physician," the man called from the ordinary walks of life, to serve his fellow men, to relieve their suffering, and to advance medical knowledge. He who is in medicine with these objects in view is the real physician and must reap happiness as his reward.

Let us first consider the physician from a physician's standpoint. The ideal physician will not treat unfairly his brother physician at any time. Honesty must be the ruling factor in all his fraternal relations. Neither private reasons nor personal grievances will influence him to do injustice to a clean-handed, honorable member of our profession. It is essential that a physician be in good standing in his county and state medical societies, and that he take an active part in all transactions for the good of the society and for the advancement of medical knowledge. These societies exist for scientific purposes and for the public good, and not for a moment does the ideal physician consider them for selfish or commercial ends. He must, to command the highest respect of the fraternity, be a man properly educated, with ambition and mental industry, be honest and fair to his brother practitioner, be ready and willing to use his talents for the public good whenever the occasion requires. Above all he must have correct habits, for only by so doing can he have an unspotted, honorable name and be able successfully to withstand the critics who are always with us. Brains and common sense are a special gift from Heaven, and happy should the physician be who is the fortunate possessor, as nothing could contribute more to his success and welfare.

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*Delivered before the Medical Society of Delaware, Middletown, October 9, 1923.

From the physician's standpoint, we take it that the goal for which each and every one of us is earnestly striving is *happiness*. In order to enjoy this supreme realization:

First: We should be most thoroughly prepared for our life work, for this noble calling (none nobler to my mind, when entered into with the proper spirit), with an eye single to the relief of suffering humanity and the advancement of medical science.

Second: Let *service* be our watchword, for the physician who is able, willing and ready to serve, mighty soon wins the confidence of the public and as a consequence he is successful. To be successful when backed up by the foregoing, merits and wins the reward which each of us so much desire—happiness. From the layman's point of view the ideal physician must have the confidence of the public, which can be won by ability and willingness to serve, coupled with an upright, honorable life. Can we imagine a man not endowed with the loftiest motives, who would subject himself to the long hours of daily toil, that he might stroke the fevered brow of his patient, and that he might apply his knowledge gained by hard labor and much expense for the relief of suffering humanity? Truly there are many in this class who are entirely forgetful of self and whose one great desire is to serve their fellow men. The public is not absolutely forgetful of this great service although we are often impressed that such is the case. While touring through New England last year, I received the shock of my life, when I stopped in a small town to view a rather imposing stone monument fully twenty-five feet high, with base eight feet square, in the top of which was the town clock. Engraved on this monument was the following inscription: "Erected to the memory of Dr. H. C. Wilber, who practiced medicine in Pine Plains from 1867 to 1919." This recognition of appreciation by the public is so rare that we think it is worthy of being chronicled.

I would not forget the ideal physician's duty to his family. While his main object in life should be service, yet his family should not suffer because of his unselfish ideals. His work should be done in a thorough, business-like manner, all visits recorded, and bills sent at regular periods. Be charitable when charity is needed, but collect regular fees for work well done. The real physician owes it to himself and family to prepare in a financial way for the time when his physical frame will no longer be able to serve his fellow men. If any man is entitled to ease and comfort in declining years it is the man who has spent his vitality, who has really used his life's blood, in relief of suffering humanity.

The physician's family should also not be forgotten. In order to be happy, the wife of the busy doctor must make many sacrifices and must share the unselfishness of the real physician. It is not sufficient to collect only needed means to pay all expenses when we are in active practice. The family should be cared for, and in a respectable way, when the head of the household has been relieved from his earthly toils and can no longer answer the call of service, so the ideal physician must not forget the business side of his noble work, during his active years.

In conclusion allow me to repeat that the ideal physician is always fair and honest to his fellow practitioners; reports everything of value to medical science to his medical society; he gives willing service to suffering humanity; he exacts worthy toll for work ably done from those able to pay. With these objects in view and executed with unswerving honesty, he can rest from his labors when called from this exacting world with a consciousness that eternal peace and happiness will be his reward.

ORIGINAL ARTICLE

NATURE AND TREATMENT OF SOME INTESTINAL DISTURBANCES IN INFANCY AND CHILDHOOD*

J. P. CROZER GRIFFITH, M.D.†
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First may be considered in general abnormalities observed in the character of the stools. The causes of these are very puzzling, and varied enough to warrant a more extended discussion than time allows.

In the first place we may have no diarrhea at all, or not to any noteworthy extent, but the chief trouble is in the alteration of the character of the feces in other respects. Second, we may have the distinct diarrheal character of the stools, apart from other alterations, constituting the chief element of danger. Third, the most troublesome alteration of the stools, and that demanding treatment, may be their constipated condition. This last, however, I will not discuss at this time.

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*Read before the Medical Society of Delaware, Middletown, October 9, 1923.

†Professor of Pediatrics in the University of Pennsylvania.

Considering the alterations other than excess of liquid found, one may first mention mucous stools. These may have but little significance. In all starvation cases in infancy, as for instance, in complete pyloric obstruction, the stools consist of brown-stained mucus. They are properly called "hunger stools." The giving of castor oil likewise produces mucous stools; not because the mucus was already there and needed removal, as the mothers often think, but as a result of the irritation set up by the drug. More or less mucus is a natural and necessary part of normal feces. It may readily be present in excess, and yet mean no more than the excess of mucus in the nasal discharge attending moderate cold in the head; that is to say, it may indicate a mild catarrhal condition of the mucous membrane of the intestine. When, however, it is persistently present and is accompanied by fever, and by few or many streaks of blood, or even blood in larger amounts, it awakens the suspicion of the existence of an ileocolitis, of ulceration of other nature, or of intussusception. It is the item of fever and tenesmus rather than the mucus alone which is the important element in the diagnosis of an ileocolitis. In chronic intestinal indigestion in subjects past the period of infancy, the great frequency with which mucus in considerable amounts appears in the stools is one of the important elements in diagnosis.

The fatty stool is one of the most frequent fecal abnormalities in infancy. The fat may appear mixed freely with the feces and giving these a bright yellow color. This is uncommon as compared with the appearance of "curds" in the stool. These curds, as is well known, are not protein but fat; and consist of free fat and fatty acids. The third form is the soap-stool, in which the fatty acids are united with calcium and magnesium to form an insoluble soap. They may be salve-like, or formed, or hard and readily crumbling. More or less protein is very often combined, and then produces a cheesy or offensive odor in place of the usual sour character of the pure soap-stool.

Theoretically, almost all the fat of the milk is utilized by the normal infant and none appears to the naked eye in the stool. Practically, however, some visible fat is of extremely frequent occurrence, and is not to be looked upon as a matter of much moment unless there are other symptoms present. Even a breast-fed baby who takes a somewhat too large amount of milk will show numerous small, scattered whitish lumps in the yellow stools; and this condition is almost the usual occurrence in bottle-fed babies. But if the stool consists very largely of large, soft, white lumps, or if it is distinctly of the nature of soap, and the infant, previously gaining, has now ceased to add to its weight, it is an indication that the fat is not being utilized to the necessary degree, and that treatment is required.

Of protein-stools little need be said. The elimination of an excess of protein may accompany that of fat in the soap-stool, or it may sometimes produce distinctly hard, yellowish protein-curds. An excess of protein in the stool will produce an alkaline reaction; although it should be said here that it is not so much the actual excess as the relative excess of protein in proportion to the amount of the fat.

Stools containing an excess of carbohydrate are often brown in color, as for instance, after taking large amounts of Mellin's Food, dextrimaltose or starch. Sometimes there is seen an acid fermentation of the carbohydrate, with the production of diarrhea, often with frothy and irritating evacuations. Brown stools also occur, as has been stated, in hunger, and are seen sometimes, too, with an excess of protein. Green stools are very common. The pale pea-green tint often observed is a matter of no moment whatever; but deeper colored, spinach-green stools are pathological. They are very common in intestinal indigestion in infants, and are often combined with the presence of large, curdy masses of fat.

A word about blood in the stools. Small streaks of blood greatly alarm the mother, but are not necessarily a matter of any moment. They readily occur with the passing of a hard fecal movement. They may be seen, too, with the mucus in ordinary cases of a catarrhal condition of the mucous membrane. They may exceptionally be the result of fissure or of hemorrhoids. If, however, the blood is present in the majority of the movements and is combined with much mucus and with tenesmus, we are dealing probably either with ileocolitis or with intussusception. We must remember, however, the possibility of the presence of blood in the stools, either visible or occult, in cases of melena neonatorum, Henoch's purpura and typhoidal or other ulceration. I have also seen severe intestinal hemorrhage occur in an infant suffering from an ulcerated Meckel's diverticulum.

When we come now to consider the actual diarrheal stool, whether or not combined with any of the alterations already described, we find a number of possible factors at work. Mechanical causes are less common in infants than in children. In the latter the diarrhea is the result of a direct irritation by such substances as green corn, grape skins, asparagus stalks, and the like.

Closely allied are the chemical causes, often combined with the mechanical. Thus unripe fruit acts probably both mechanically and chemically to produce irritation. Many other causes are chemical in nature. For instance, the diarrheas often called fermentative are the result of the acid produced by abnormal fermentation of carbohydrate in the intestinal canal. This has already been referred to. Formerly most of these diarrheas were described as infectious. They are, it is true, infectious in the sense that many of them depend upon abnormal bacterial growth; but the direct cause would appear to be the chemical action of the products of the bacterial growth in the intestine itself. Closely allied, if not identical, are the toxic causes. Some of these toxins not only act upon the intestine itself, but are absorbed and influence the general state of the infant or child. All the diarrheas of acute gastro-enteric intoxication are to be placed in the toxic class. The diarrhea of acute intestinal indigestion belongs to some one of the classes already described, varying with the case.

Diarrhea of nervous origin is a common form, especially after infancy, but seen at all ages. It is the form which comes from chilling of the body, the relaxing influence of very hot weather (I am not speaking now of the decomposition of the food through hot weather), fatigue, excitement, and the like. The passage of a liquid stool immediately after food is taken is a nervous diarrhea of reflex origin.

Another class is the metabolic diarrhea, which is really an effort to eliminate from the system the products of faulty metabolism. The diarrhea seen in the acute infectious diseases is in this class, and that of uremia as well. The difference between this metabolic form and some of those previously mentioned is that in the latter the poison is situated in the intestine, while in the former it is in the circulation and is the result of imperfect metabolism. Finally we have inflammatory diarrhea due to the inflammation of the intestine produced by infectious germs, sometimes of a specific nature. Here belongs the diarrhea of ileocolitis as well as that of the ulceration of tuberculosis or typhoid fever.

The principal symptom of diarrhea is, of course, diarrhea. There is, however, prone to be an attendant fever in most of the conditions, at least at first, and with the exception of the nervous variety. In the inflammatory form the fever continues and is liable to be combined with the evacuation of blood and of a good deal of mucus, while tenesmus is a frequent symptom. In the diarrhea of acute gastro-enteric intoxication there is a very profound depressing influence upon the whole general system. This toxic condition is wanting in the diarrhea due to carbohydrate fermentation, and is not very marked in that dependent upon acute intestinal indigestion. In all forms of severe diarrhea with much loss of liquid from the bowel, a condition of dehydration rapidly develops. This is shown by the general shrinking of the tissues, the sunken eyes with dark rings about them, the restlessness and irritability, and later, in bad cases, lethargy and somnolence. Acidosis is the threatening danger here, and the respiration may become deep and accelerated while coma sets in.

There are, besides these various symptoms of the different forms of diarrhea, often others determined by disease in other organs; as, for instance, when the stomach shares in the morbid process, as it so often does. The subject is too large, however, for further discussion here.

When we come to the treatment of diarrhea, we encounter a large problem, depending especially upon the cause, the severity of the symptoms, and the general condition of the patient. Only an outline can therefore be attempted.

The first step in acute cases is the withdrawal of food, unless this has already been done satisfactorily before the physician is called in. The same rules apply here to some extent as in cases of acute vomiting. Yet although food is largely stopped, water must be given freely in some form. Weak cereal decoctions are in order, unless the diarrhea is distinctly fermentative in type, showing decomposition of carbohydrate. If it is of this nature, albumen-water is preferable. The stopping of food must not be continued too long, and in the case of marantic and greatly debilitated infants, it may be inadvisable to do it at all. But, in any event, at least all milk should be withdrawn from the diet for a time. Another question is as to the giving of an initial purgative. If the case is seen early, this certainly should be done. If there is reason to believe that the intestine has already been well emptied, either by nature or with the aid of purgatives already given, further purgation is ill-advised. Rest in bed is, of course, imperative. Fever generally requires little treatment. If at the outset it is high, sponge-baths or warm tub-baths are the best procedure. Shall any measures be taken to check the diarrhea by drugs? Certainly not at the beginning of the case, since nature is endeavoring to get rid of the offending material. A little later, astringents may be given, such as full doses of bismuth subcarbonate combined with a tannic acid preparation. Opium is of the greatest value in many severe acute cases, but it must be administered with intelligence. Where there are evidences of toxemia with the presence of fever, it is to be avoided. On the other hand, where the discharges are very free and there is danger of dehydration and an attending acidosis, opium is invaluable. Every case must be a rule for itself, and we should approach it with minds free from any prejudice.

When it comes to the treatment of the more subacute or chronic forms of diarrhea, or of the persistence of abnormal stools which are not actually diarrheal, we are helpless if we do not carefully consider the various causes which may possibly have been acting through a considerable time. Here again I can merely make certain suggestions. The treatment is now chiefly dietetic. In my experience drugs have little influence. Many of the diarrheas are greatly helped by a high protein diet. The protein-milk of Finkelstein is especially useful under these circumstances, particularly when we have reason to believe that the intestine is not very tolerant of carbohydrate. In other cases where the fat is evidently undigested, the ordinary buttermilk mixture is extremely satisfactory. I have had excellent results with it. The character of the stools will often change promptly after this food has been commenced, the large white masses of fat disappearing, and the feces taking on a characteristic, slightly brown color and becoming more consistent. If the diarrhea persists under this diet, it may be well to try a reduction of the percentage of the sugar of the mixture. In other cases where the stools are soapy, or contain many curds, with or without diarrhea, malt-soup is often useful. Many infants with diarrhea, however, have the stools become more watery under the influence of this high carbohydrate food. Indeed, malt-soup is better for the cases purely of soap-stool than it is for those with very loose movements. When the stools are foul-smelling, with or without diarrhea, protein decomposition is to be suspected, and the addition of a considerable amount of starchy food to the mixture may change the character. For instance, after an infant has been upon protein-milk for some time, the stools are prone to take on the soap-character and to be of a foul odor, and the gain in weight ceases. We may possibly correct the condition without a radical change in food merely by the addition of a good deal of starch and of a small amount of a malt extract, preferably nondiastatic.

I have not yet spoken of the treatment of inflammatory diarrhea. Here we have to do probably with an illness which will be long-continued. We are dealing with inflammation rather than with a toxic condition, and no initial starving is necessary. In fact it only adds to the debility. Milk, however, should be withdrawn for a time; but care must be taken that sufficient nourishment of other nature is given. There is in this form of diarrhea no objection to the early use of opium. It is important to relieve the pain and tenesmus which are so wearing to the child. Atropin is also sometimes serviceable to check the tenesmus, but must be given in full doses to be of any value. Intestinal injections of starch-water or of suspensions of bismuth are of value, but in my experience astringent injections of silver, tannic acid or the like, are often more harmful than useful, and may increase the pain and straining. It is always a good plan after using injections even of simple salt-solution or starch-water for a few days, to stop them for 24 hours, as a point is sometimes reached where they appear to keep up the trouble rather than to relieve it.

Of course in all severe cases of diarrhea of whatever nature, symptomatic treatment for the general condition is needed. Cardiac tonics may be required, and alcoholic stimulants are often invaluable and may tide the patient over a dangerous period.

Finally, I must emphasize again the danger of dehydration in severe diarrhea. Morphine given promptly, when there is no contraindication, tends to prevent this. In addition it is absolutely necessary to see that water is administered in some way and is absorbed. The irritated state of the bowel interferes with the giving of water by this route. If the stomach is tolerant, we may succeed in getting sufficient into the economy by way of the mouth, although one trouble is that the taking of water into the stomach by the child may excite a reflex action in the intestine and an evacuation is liable to take place. However, this is sometimes a minor matter and the plan should certainly be tried. If for any reason it is not successful, we must resort to hypodermoclysis or to intraperitoneal injections.

DISCUSSION

DR. J. W. BASTIAN (Wilmington, Del.): I should like to ask Dr. Griffith his opinion as to the use of the prepared tablets known as Bacillus Bulgaricus and B. Acidophilus for milk. I have never heard anyone who has made a complete study of the matter express an opinion, and I am especially interested because recently a "detail" man came into my office who was advertising these preparations, and claimed that they are much used by pediatricians.

I should also like to have Dr. Griffith tell us about the modifying of milk—just what formula he would give for whole milk modification. I have had considerable experience and have always made a practice of mixing milk and cream separately. My argument for this is the vast difference in the milk which we procure, even from the same cow—in fact, no matter how we get it. If we use whole milk (top milk), it seems to me we cannot obtain our different combinations of fats and proteins as well as when we measure the milk and cream separately.

I wish to compliment Dr. Griffith on his interesting and instructive paper. I hope he will be with us again.

DR. GRIFFITH (in closing): As regards the Bulgarian bacillus tablets, about which I have been asked, I confess that I have never been able to convince myself that they were of benefit when taken as medicine, or especially when used to produce milk-cultures for the feeding of infants. The various experiments which have been done in the effort to implant the Bulgarian bacillus in the intestine do not seem to be very convincing. For the making of buttermilk I certainly very much prefer the liquid cultures. The same thing can be said of the acidophilus tablets. I believe they have very little value either when taken as medicine by adults, or when used for making milk-cultures.

With regard to the method of modifying milk; for a long while I used mixtures composed of certain proportions, respectively, of cream and of whole milk; but, inasmuch as it was extremely difficult and often impossible to procure a cream of standard strength, I started to use top-milk mixtures in which creams of fairly uniform strengths could be obtained by taking off different layers of the milk. I had made for me a series of tests of the amount of fat in these different layers, and found that the percentages ran fairly uniform for the individual layers. By employing a definite amount of a certain layer of milk, combined with, say, an equal amount of water, one can readily prepare a milk which runs uniformly 2 per cent strength in protein and any strength of fat which one desires.

As we all know, there has been a good deal of discussion throughout the country regarding the employment of simple dilution of whole milk, the reason for this urge being that feeding by percentages was difficult. This is really a fallacy in reasoning; for, when you come to think about it, the users of these simple dilutions are really feeding according to percentages. When you say you will mix one-half milk and one-half water, what is that but a percentage?—viz., 50 per cent of milk and 50 per cent of water. Then, if we stop for a moment to think that the milk contains approximately 4 per cent of fat and 4 per cent of protein, our minds at once say we are giving, therefore, 2 per cent of fat and 2 per cent of protein in our mixture. That is all there is to percentage feeding. Then when a physician adds a certain amount of sugar to this mixture, as he always does, to know where he really stands, he is obliged to think in a percentage. If he adds, for instance, 1 ounce of sugar to his 20 ounces of diluted milk, he knows he is adding 5 per cent, and it is no more difficult to think in the terms of 5 per cent than it is to think in that of a fraction equalling one-twentieth. As regards the difficulty of making the percentage-mixtures as far as the mother is concerned, it is no harder for her to take the upper 16 ounces or the upper 20 ounces of a quart, according to what percentage-strength in fat her physician wishes the baby to have, and to add an equal amount of water to it, than it is for her to take whole milk and dilute it with an equal part of water.

Dr. O. Pine queries: Have you noticed how charmingly witty are the contributions of the reporter for the Elk County Medical Society? *Vide* ATLANTIC MEDICAL JOURNAL, October, 1923, page 44, under heading "Elk." Will you please notice his sturdy loyalty to the "family doctor"!

EDITORIAL

QUACKERY AND THE MEDICAL PROFESSION

To hear doctors talk and to read the vehement and denunciatory articles on osteopathy, chiropractic, naturopathy and the rest of that ilk, one would think that we are living in an age of unprecedented humbuggery. Like the "coldest day in the memory of the oldest resident" or "the hottest day in July in history," this is not true. Humbugs of all kinds have existed always, and will flourish as long as credulity is a dominant trait in human nature. It is easier to believe than to reason; it takes less effort to accept a solution than to solve a problem; and in the domain of medicine, the yearning for relief from pain and suffering stills whatever misgivings the sufferer may have as to the credibility of the miracle worker. Besides, have not new things sprung up in medical science championed at first by few, ridiculed by many, and finally accepted by all? What was proclaimed a falsehood yesterday becomes a truth to-day, to the lasting benefit of mankind. Was not the rank and file of the profession opposed at first to vaccination, the germ theory of disease, antitoxins and similar discoveries? Why may not osteopathy or some other medical cult be just such a wonderful discovery, the importance of which is perceived only by the elect? Besides, why not take a chance? Perhaps he, the chiropractor, is the true prophet. It is just some such reasoning that makes it possible for the intelligent layman to swallow, bait, hook and sinker, the vagaries of the various cults in medicine.

The psychology, after all, is not different from that which makes even the seasoned business man invest in spurious undertakings. Here, too, the phenomenal success of the Bell Telephone Company, the Standard Oil Company, the Ford Motor Company and similar gigantic developments make the average man part with his last dollar in the hope of gaining a fortune, with the help of the glib promotor. Why not take a chance? Miracles have happened before!

We medical men wonder at the gullibility of people who accept every new fake and rush to the offices of the self-styled professors and doctors of this, that and the other. Yet, are we without guilt? Is our own house in order?

The manufacturer of a well-known digestive preparation assures us that "The essence of —— exhibits the characteristic actions of these digestive ferments. It digests egg-albumen and meat." A simple experiment will convince one that this preparation does not digest egg-albumen, even if allowed to act for forty-eight hours. And this represents the unwarranted claims made for a large number of medicinal preparations which are nevertheless prescribed by doctors. To look over an up-to-date list of endocrine preparations is like reading an announcement of a bucket shop. The same extravagant statements, the same alluring promises, the same misrepresentations—and all based on the efficacy of some two or three ductless gland preparations, and the speculative quasi-scientific writing of so-called endocrinologists. What proof have we that certain symptoms are caused by dysfunction of certain glands; and if they are, that the administration of glands will in some way remove the trouble? No more proof than the poor sucker who is persuaded to invest in a non-existent oil well in a territory in which oil has actually been discovered! Because thyroid extract has proved efficient in hypothyroidism, it does not follow that ovarian, adrenal, mammary, orchitic and various other glandular extracts, singly or in "pluriglandular" form, will be equally efficacious. Yet, manufacturers of this refuse of slaughter houses are making millions out of the credulity of doctors.

When we turn to another domain of therapeutics, physiotherapy, we find the same prevarications on the part of the manufacturers of electro-therapeutic apparatus on the one hand, and the almost idiotic acceptance of statements regarding the nonexistent virtues of this, that or the other apparatus on the other. Wish becomes father to the thought, and what electricity on purely theoretic grounds ought to do is heralded as actual performance. High-frequency current "cures hypertension"; static electricity "cures" everything. Well, they do not! All one has to do is to try these currents and find how limited, indeed, their field of usefulness is. Yet, doctor's offices are littered with all sorts of junk, bought on the say-so of the detail man.

And we, intelligent and supposedly scientifically trained men have the temerity to ridicule the laity for accepting without critical analysis the statements of medical charlatans!

Why not clean our own house first? A. R.

A CURIOUS EPITAPH

On a tombstone at the Burnhill Cemetery in London there is the following inscription:

> Here Lyes Dame Mary Page
> Felict of Sir Gregory Page Bar
> She Departed This Life March 11, 1723
> In The 56 Year of Her Age
> In 67 Months She was Tapd 64 Times
> Had Taken Away 240 Gallons of Water
> Without Ever Repinning At Her Case
> Or Ever Fearing The Operation.

Local interest is attached to this inscription through the fact that one of the descendants of this famous Mary Page is the wife of a prominent Wilmington citizen, Mr. David Snellenburg.

TRANSACTIONS OF THE 134TH ANNUAL SESSION OF THE MEDICAL SOCIETY OF DELAWARE, MIDDLETOWN, DEL., OCTOBER 8-9, 1923

FIRST SESSION, OCTOBER 8TH, 2:00 P. M.

The report of the House of Delegates was read by the secretary and accepted by the Society. The Committee on Revision of the Constitution then presented the new By-Laws, which, after discussion, were adopted by the Society, and 500 copies of the document were ordered printed and distributed. Adjournment.

SECOND SESSION, OCTOBER 8TH, 8:00 P. M.

Because of the limited attendance at this session, the usual ceremonials were postponed and the program concluded with the reading of three papers: Extranasal Conditions Associated with Sinusitis, by Dr. W. F. Bonner, Wilmington; The Prevention of Blindness, by Dr. E. R. Mayerberg, Wilmington; Tuberculosis of the Eye, by Dr. W. O. LaMotte, Wilmington. Adjournment.

THIRD SESSION, OCTOBER 9TH, 9:00 A. M.

The session opened with an invocation by the Rev. Percy L. Donaghy, pastor of All Saints P. E. Church, followed by an address of welcome by Hon. Walter S. Leatherbury, Mayor of Middletown. Dr. Dorsey W. Lewis then delivered the presidential address, on "The Ideal Physician." The following papers were then presented: Diabetes Mellitus, by Dr. E. M. Vaughan, Middletown; Rectal Examinations by the Family Physician, by Dr. B. R. Veasey, Wilmington; Nature and Treatment of Some Intestinal Disturbances in Infancy and Childhood, by Dr. J. P. Crozer Griffith, Philadelphia; Some Experiences of a Health Officer, by Dr. L. S. Conwell, Dover. Adjournment. Dinner was served in the New Century Country Club to all present, by the ladies of the club.

FOURTH SESSION, OCTOBER 9TH, 2:00 P. M.

The following papers were presented: New Developments in the Treatment of Neoplastic Diseases (lantern slides), by Dr. W. L. Clark, Philadelphia; Prospects of the Prostatic (lantern slides), by Dr. Alexander Randall, Philadelphia; Pylorospasm and Pyloric Stenosis, by Dr. C. E. Wagner, Wilmington; Present Status of the Medical Profession, by Dr. C. P. Noble, Philadelphia. Dr. J. Roscoe Elliott, Laurel, was elected President of the Society for 1924. Adjournment.

BOOKS RECEIVED

Diagnostic Methods. A guide for history taking, making of routine physical examinations and the usual laboratory tests necessary for students in clinical pathology, hospital internes, and practicing physicians. By Herbert Thomas Brooks, A.B., M.D., F.A.C.P., Professor of Clinical Medicine, College of Medical Evangelists, Los Angeles, California. Fourth edition with 52 illustrations. St. Louis: C. V. Mosby Company, 1923. Price $1.75.

Study of Mental Disorders. By Francis M. Barnes, Jr., M.A., M.D., Associate Professor of Nervous and

Mental Diseases in the St. Louis University Medical School, etc. Second edition. St. Louis: C. V. Mosby Company, 1923. Price $3.75.

Diseases of the Skin. By Richard L. Sutton, M.D., LL.D., Professor of Diseases of the Skin, University of Kansas School of Medicine. With 1,069 illustrations and 11 colored plates. Fifth edition, revised and enlarged. C .V. Mosby Company, St. Louis, 1923. Price $10.00.

The Treatment of Diabetes Mellitus; With Observations Based Upon Three Thousand Cases. By Elliott P. Joslin, M.D., M.A., Clinical Professor of Medicine, Harvard Medical School; Consulting Physician, Boston City Hospital; Physician to New England Deaconess Hospital. Third edition, enlarged, revised and rewritten. Illustrated. Philadelphia and New York: Lea & Febiger, 1923. Price $8.00.

Diseases of the Skin. By Frank Crozer Knowles, M.D., Professor of Dermatology, Jefferson Medical College; Lieutenant-Colonel Medical Reserve Corps, U. S. A., etc. Second edition, thoroughly revised with 229 illustrations and 14 plates. Philadelphia and New York: Lea & Febiger, 1923. Price $6.50.

Rhus Dermatitis From Rhus Toxicodendron, Radicans and Diversiloba (Poison Ivy); Its Pathology and Chemotherapy. By James B. McNair. The University of Chicago Press, Chicago, Ill. Price $4.00.

The Care of the Baby. A manual for mothers and nurses, containing practical directions for the management of infancy and childhood in health and disease. By J. P. Crozer Griffith, M.D., Professor of Diseases of Children in the University of Pennsylvania. Seventh edition, thoroughly revised. 12mo of 478 pages with 104 illustrations. Philadelphia and London: W. B. Saunders Company, 1923. Cloth $2.50 net.

A Practical Textbook of Infection, Immunity and Biologic Therapy with special reference to immunologic technic. By John A. Kolmer, M.D., Dr.P.H., Professor of Pathology and Bacteriology in the Graduate School of Medicine, University of Pennsylvania, with an introduction by Allen J. Smith, M.D., Professor of Pathology in the School of Medicine of the University of Pennsylvania. Third edition, thoroughly revised and mostly rewritten. Octavo of 1,210 pages containing 202 original illustrations, 51 in colors. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, $12.00 net.

The Medical Department of the United States Army in the World War. Volume V. Military Hospitals in the United States. Prepared under the direction of Maj. Gen. M. W. Ireland, M.D., Surgeon General of the Army, by Lieut. Col. Frank W. Weed, M.C., U. S. Army. Washington: Government Printing Office, 1923.

The Surgical Clinics of North America. December, 1923, Vol. 3, No. 6, Kansas City Number. Published bi-monthly. Philadelphia and London: W. B. Saunders Company.

BOOK REVIEWS

TEXTBOOK OF THERAPEUTICS, Including the Essentials of Pharmacology and Materia Medica. By A. A. Stevens, M.D., Professor of Applied Therapeutics, University of Pennsylvania, Philadelphia. Sixth edition, entirely reset. Octavo of 793 pages. Philadelphia and London: W. B. Saunders Company, 1923. Cloth $6.25 net.

The need for a sixth edition attests to the deserved popularity of this book.

In no other branch of medicine is the need of healthy conservatism as urgent as it is in therapeutics. Here is where wish becomes father to the thought, and fancy is carried far beyond the confines of scientific knowledge. The numerous new drugs and therapeutic measures are foisted on a credulous and all-too-willing profession by manufacturers, and the mushroom growth of the new panaceas is well nigh bewildering.

It is therefore refreshing to have a textbook on therapeutics which expounds in a clear and conservative manner the things that time and experience have shown to be true and reliable.

The author considers the composition, preparation and administration of drugs, their physiological effect on the system of the body, remedial measures other than drugs, and in applied therapeutics, the various diseases in which these drugs and other agents are indicated. Among the new agents which are treated for the first time in this book are: benzyl benzoate, papaverin, pituitary extract, thyroxin, thromboplastin, methyl alcohol, benzyl alcohol, mercurochrome, germanium dioxid, emetin, yeast, acid sodium phosphate, aluminum chlorid, luminal, cinchophen, arsphenamin, acriflavin, proflavin, Dakin's solution, chloramins, scarlet red, quinidin, ethyl-hydrocuperin, surgical paraffin, and carbon dioxid snow.

This new matter, like the rest of the book, is discussed in a concise and authoritative manner, without the extravagance indulged in by enthusiasts.

Altogether it is a safe and sane volume that should be in the hands of every practitioner. A. R.

TRANSACTIONS OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA. Third Series. Volume XLIV. Printed for the College, 1923.

The subject matter in the transactions of the College of Physicians of Philadelphia is always of high order. The present issue is fully up to previous standards.

The Membership List is interesting as it includes the names of many of the leaders in the medical profession. A. C. M.

PRACTICAL LOCAL ANESTHESIA. By Robert Emmett Farr, M.D. Pp. 529; illustrations, 219. Cloth, $8.00. Philadelphia and New York: Lea & Febiger, 1923.

Farr divides his volume into three parts of six chapters each. The first part deals with the anesthesia problem in general, with the equipment and technique for local anesthesia, and with the anatomy of the sensory nervous system. The second part deals with local anesthesia in all regions of the body except the abdomen. The third part deals with the abdominal wall and its contents.

This volume is an unusually practical one, and contains descriptions of such simplicity and yet such detail that even the novice can hardly go astray. Included in the technique of anesthesia is also a great mass of the technique of surgery, making the book doubly valuable. While the work represents the researches and methods of the author, the literature of the whole subject has been thoroughly digested and presented in a concise form. Several technical procedures are unique, notably the author's pneumatic injector. Omitting such very special equipment, the technique is simple, direct and efficient. The illustrations are quite well done, many of them being from photographs.

For completeness' sake one might wish that the author had included a section on spinal anesthesia, which he omits because of a limited experience. In the second edition, which will doubtless soon be in demand, we would suggest a section on spinal anesthesia by Babcock or Gellhorn. We believe this would make an admirable work more admirable, and would present a complete résumé of the principles and practice of local anesthesia. W. E. B.

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ADDRESS

THE OPHTHALMOLOGIST IN THE DIAGNOSIS OF EPIDEMIC ENCEPHALITIS*

WILLIAM HARDIN SEARS, M.D.

HUNTINGDON, PA.

During the winter of the third year of the World War reports came from Austria and France of an apparently new disease with a striking symptomatology and of obscure etiology. The following winter similar cases were observed and studied in various parts of Europe, England and America, and within two years the malady had become of world-wide extent.

Its nomenclature was as varied as the symptoms of the disease and the conceptions of its pathology. Lethargic encephalitis was one of the early names given and has endured to the present. Epidemic encephalitis, however, is the title now in general use; it is perhaps more nearly correct as it covers all cases of the disease, including those in which somnolence is not present.

As the literature increased, comparison of its symptom complex with that of an epidemic disease of a similar type, which had occurred as early as the Sixteenth Century and had recurred at various periods, notably in 1872 in Germany, and in 1890 in Italy and Austria, seemed to show that the present epidemic was but another recurrence of the earlier disease.

The appearance of epidemic encephalitis coincident with or subsequent to influenza, also in epidemic form, was noted in the reports of the outbreak of 1890, and further study developed evidence of the associated appearance of the two for more than three centuries. This led many in the earlier studies of its etiology and pathology to assign it a place as a special form of influenza. Among many well-known observers of the disease the belief is current that some definite although unknown relationship exists between the two; while some equally competent hold the association to be purely coincident.

Medical opinion to-day recognizes the disease as a distinct entity; an inflammatory, nonsuppurative affection of the central nervous system; infectious as well as slightly contagious in character; due probably to a filtrable virus. The contagion is largely air-borne and its portal of entry is probably the nasopharynx. The acute attack is frequently followed by progressive cerebral disease.

Pathologic changes in the brain are marked vascular congestion, perivascular infiltration of inflammatory cells from the vessel walls, toxic degeneration of ganglion cells, and later an overgrowth of glial tissue. These lesions may be present in any part of the central nervous system and according to their localization may produce some one of its protean forms.

The disease being an acute infection is naturally ushered in by fever, headache, and malaise, although the onset may be so mild that these may be but slightly annoying to the patient. In children, meningeal symptoms may be observed at the beginning. It varies in severity from the case with a transient diplopia and a mild somnolence, to the fulminating type, where rapid extension along the brain stem to the medullary vital centers results in death in from 24 to 48 hours.

From the beginning, the literature, both in special and general journals, was of the greatest interest to the ophthalmologist, for in many cases, the first symptoms, or the first to be noted, were ocular. This fact of itself was sufficient to require the ophthalmic surgeon to attain an adequate acquaintance with the disease, so that those patients who by reason of ocular symptoms sought his advice primarily, might be correctly diagnosed; or on the other hand, he, when called into consultation in similar cases by the perplexed internist, might be able to add the knowledge necessary to reach a positive conclusion.

In view of the lack of a working knowledge of the disease on the part of the internist as well as the ophthalmologist in the first stages of the recent epidemic, it seems quite probable that many cases of all types passed unrecognized and that, even to-day, cases of mild form may not be diagnosed. That some of these cases have been labeled neurosyphilis and received energetic antiluetic treatment, goes without saying, for such was the experience of the first two patients suffering from this disease who came under the observation of the writer. A brief report of one of these patients was given before this section three years ago. There may have been others; if so, they remained undiagnosed.

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*The Chairman's Address, delivered before the section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 2, 1923.

Two diseases, whose microscopic lesions in the pathologic involvement of the central nervous system are practically identical with those of epidemic encephalitis, are poliomyelitis and syphilis. In comparing the first two: epidemic encephalitis occurs chiefly in winter, affects adults very largely, its lesions are usually in the brain and affect the meninges less than poliomyelitis; while poliomyelitis comes on in summer, affects children principally, its lesions are chiefly in the spinal cord and affect the coverings to a greater extent, so that Kernig's sign, stiff neck and back, may be present. If the clinical symptoms are purely brain in character or, on the other hand, of a purely cord type, the differential diagnosis is not difficult.

It is in the middle ground cases, where the lesions of encephalitis extend to the cord or those of poliomyelitis ascend to the brain, that real trouble is met. Later, when atrophy, reactions of degeneration, and flaccid palsy result, the diagnosis is clear. If the case proves rapidly fatal, we are left in doubt. Syphilis differs in attacking so frequently all the ocular tunics. Its palsies of the eye are usually of longer duration, and less responsive to treatment. The Argyll-Robertson pupil is present occasionally in epidemic encephalitis and then adds to the difficulty of separation of the two diseases.

In an analysis by the writer of 19 cases coming under his observation and the reports of more than four hundred cases, the ocular symptoms found were diplopia, ptosis, impaired accommodation, nystagmus, unequal or irregular pupils, slow or absent light reflex, paresis or paralysis of associated movements, conjugate deviation, optic neuritis, papilledema, retrobulbar neuritis, optic atrophy, chorioretinal and retinal changes, hemianopsia, contracted visual fields, scotomata, lowered visual acuity, blindness, corneal anesthesia, exophthalmos and lagophthalmos. The first five are named in order of frequency.

The ocular signs appear early in the disease and may consist of paresis of one of the eye muscles alone or in combination with ptosis. The deficiency in motility of the globe may be so slight as to be uncovered only upon extended rotation of the eyes or so great as to induce total paralysis of movement.

Diplopia is the most frequent symptom, and is characterized by its early onset, transient duration and tendency to recurrence. It may be homonymous, crossed or vertical. The type, of course, depends upon which muscle or muscles are involved and may, in the same patient, change from one form to another during the acute course of the disease, while all three types have been observed in the same case at different times. This serves to demonstrate the transient and migratory character of the acute palsies. The subjective annoyance due to diplopia, especially when an associated vertigo is present, may be extreme. Usually, however, this disappears soon, even though the muscle is still weak or an active squint persists. The image is doubtless being suppressed, as in concomitant strabismus. Reappearance of the subjective sensation of diplopia may mark the transfer of the paresis from one muscle to another.

Second in point of frequency is ptosis. This, like diplopia, is noted early, is usually bilateral, is rarely complete, and may be more marked on one side. It is frequently associated with palsy of the external recti, a combination rare in other diseases. Ptosis also is usually of relatively short duration, although longer as a rule than diplopia.

Impaired accommodation comes third in order of involvement but is more persistent and is the last of the three to clear, remaining often for months after other symptoms have disappeared. Accommodative paresis in the emmetrope is evidenced by difficulty in reading, while in the presence of hypermetropia or hypermetropic astigmatism of considerable degree, except for very large type, it is impossible. Total paralysis of accommodation is relatively rare. These cases show blurred distant vision as well as inability to read ordinary news print at any distance in emmetropia. In high degrees of hypermetropia or astigmatism, visual acuteness may be so reduced as to give markedly contracted visual fields, if they are taken without correcting glasses. Other anomalies recorded are the association of very active pupillary reflexes with marked weakness of accommodation, and mydriasis with active light reflex and accommodation.

Nystagmus, while less common than the three symptoms already named, is important and frequently observed. It may be horizontal, rotary, vertical, oblique or a combination of two or more of these forms; on the other hand, nystagmoid twitchings may alone be present.

Inequalities and irregularities of one or both pupils are not unusual. Sluggish or even absent reaction to light may be noted. Argyll-Robertson pupils have been recorded and at times, at least, found difficult to separate etiologically from syphilis. Mydriasis with and without light reflex, and miosis also are seen.

Paresis or paralysis of the various associated movements, including convergence, occur. Spasm of convergence has been set down and conjugate deviation noted.

From the foregoing summary it seems apparent that the most significant ocular sign of epidemic encephalitis is an ophthalmoplegia of varying degree, involving both the extrinsic and intrinsic musculature, the extrinsic muscles being affected more frequently than the intrinsic. It is unusual to find a complete palsy of any one ocular muscle, a paretic condition being the rule. The extrinsic palsies are distinguished by an early appearance, fleeting course and wandering tendency.

Of the cranial nerves, the third, sixth and seventh are more often affected, the fourth seems rarely but definitely to be involved. The difficulty of study of such a palsy in the presence of ptosis and other muscle weakness must not be forgotten.

The relative importance of the other and rarer symptoms mentioned, such as the varied affections of the optic nerve, chorioretinal disease, contracted visual fields, etc., will be brought out by further studies. The statements and comparisons made as to duration of diplopia, ptosis and the various muscle palsies have to do with the acute period of the disease.

The observations of the first years of this epidemic gave a more hopeful prognosis for those who survived the acute period of the disease than has been found justified by longer experience. In many of these patients there ensues a period of apparently normal health, lasting for months or even years, which is later followed by a chronic progressive disease of the nervous system; in others, the acute attack marks the beginning of such disease. Notwithstanding the fact that the acute attack may have been mild, it is quite possible that serious chronic manifestations may appear later. This intervening period of normality has been compared to the "para" stage of syphilis while the invasion of the nervous centers by a special toxin similar to the metasyphilitic toxin has been suggested.

Since the pathologic lesions may involve any part of the brain, the symptoms of the chronic nervous affection are manifold and offer many syndromes. It follows naturally that as ocular involvement is a distinct part of the acute disease, it will be represented in the chronic stage. In this later stage again we find weakness of various ocular muscles alone or combined, rarely almost complete external ophthalmoplegia, ptosis, pupillary inequalities and irregularities, sluggish or absent light reflex, Argyll-Robertson pupils, miosis, mydriasis and nystagmus.

In the acute stage of epidemic encephalitis, the eye symptoms are of great importance from a diagnostic standpoint and since so many of the functions of the eye may be affected, no case can be considered to have been thoroughly studied without a complete ophthalmological report.

Of as great importance diagnostically but of greater from the ground of prognosis may be the post-encephalitic ocular complications. These may consist of some one or more of the above ocular symptoms, which have remained uncured from the acute attack or which may appear, long after normal health has apparently been restored, as new symptoms.

These ocular palsies, coming under observation or arising long after the original disease has passed, the oculist may find difficult to place etiologically. If the attack has been mild, the patient may not mention it, or if, as is often the case, influenza has been associated, the history of previous disease may be simply that of a "cold" of influenzal type or an attack of "grippe." If now, one fails to elicit the history of diplopia or ptosis and perhaps lethargy which had been present during the prior disease, and forgets or does not know that a post-encephalitic palsy may develop in this way, it will, of course, be classified incorrectly.

In certain cases, this development of an ocular palsy, with a history similar to the one suggested, may not only be surely retrodiagnostic of the original disease, but also prognostic as well of beginning chronic disease of the nervous system, of which this is the precursor. Some of you have had such types under observation.

In bringing before you this brief and elementary discussion, the thought has been to call attention again to some points which, though generally well known, have not extended universally and may at times be lost sight of or forgotten. Epidemic encephalitis is a distinct entity of very considerable consequence. It is often associated with influenza. The acute attack is frequently but the beginning of progressive cerebral disease. Mild symptoms in the initial stage do not insure against subsequent serious organic lesions.

Because of this aftermath of chronic nervous manifestations, with varied syndromes which simulate a number of other diseases, it has become of increasing interest and concern to the internist and neurologist, but in no less degree to the ophthalmologist.

The disease but rarely, if ever, occurs without eye symptoms. Under certain conditions it may be recognized by these signs alone. In a majority of all cases, they aid greatly in diagnosis. The ocular symptoms may be the first or only ones to be noted, or the ophthalmic surgeon may be the first or only physician to see the case. Consequently it is important that every ophthalmologist shall have sufficient knowledge of the disease to diagnose it correctly, when such patient consults him primarily or when he is called in consultation by a confrere. In view of the varied functions of the visual system affected in this disease, study of each and every case, to be complete, must include a full ophthalmological report.

ORIGINAL ARTICLES

THE SURGICAL TREATMENT OF CONCOMITANT SQUINT*

WITH SPECIAL REFERENCE TO THE CHOICE OF OPERATION BEST SUITED TO AN INDIVIDUAL CASE

LUTHER C. PETER, M.D.

PHILADELPHIA, PA.

It is assumed in this communication that preliminary treatment by orthoptic exercises, fusion training, and refraction fails to restore the visual axes to parallelism, and that surgical measures are necessary. This necessity may arise either because an eye remains amblyopic, the fusion faculty is totally absent or too defective to respond, or parallelism cannot be restored by nonsurgical measures because of muscular abnormalities.

Methods: The three types of operations which may be practiced are tenotomy, tendon tucking, and resection with or without advancement, or advancement without resection. The mechanical and surgical effect of each type of operation will be considered first, and their application to the types of cases encountered clinically will form the second part of the paper.

Tenotomy: A simple tenotomy of an overacting muscle or muscles is easy of execution, and leaves nothing to be desired in so far as the appearance at the seat of operation is concerned, excepting the sinking-in or retraction of the caruncle when an internal rectus is improperly tenotomized. This last objection may be easily avoided by carefully and freely loosening up the conjunctiva towards and under the caruncle before the tendon is detached. If an internus is divided, a gain of about ten to eleven degrees in the angle of squint may be looked for. Division of an externus in itself is apt to be of even less value.

The disadvantages of tenotomizing an internus are: first, loss of converging power. If there were no other objections to the cutting of the internal rectus, this objection alone is sufficient to make an operator hesitate to tenotomize the internus when visual acuity is normal or good in both eyes. The writer has studied the converging power of many cases of tenotomized internal recti, including a few of his own performed in the earlier years of his ophthalmic practice, and has never seen a case in which converging power was sufficient for comfortable near work. In some instances the patient was able to converge up to reading distance, but thirteen inches is not sufficient for sustained close work.

The second serious objection to tenotomy of an internus is the danger of gradually converting a convergent squint into a divergent squint of a paralytic type. This is not an occasional complication, but one which occurs with sufficient frequency to regard the operation as an unsafe and, in a majority of instances, an unwarranted procedure.

The third objection which applies to both internal and external recti is the small amount of correction obtained in the average case. The results obtained will depend upon the completeness of the tenotomy and the limitations of the cheek ligaments. A gain of more than eleven degrees can rarely be obtained if the muscle becomes reattached, and much less than ten degrees of gain follows the tenotomizing of the external rectus. The elder Landolt, in an article which appeared in *The American Journal of Ophthalmology*, February, 1923, page 93, declares that a tenotomy is never justifiable. This is possibly an overstatement of the case. His reasons, however, are sound.

In my experience, a tenotomy should rarely be practiced. It may be selected, if carefully and correctly performed, in the following conditions:

1. If one eye is permanently amblyopic, and the squint is fifteen degrees or less.

2. In high degrees of divergent squint, when bilateral advancement and resection of the interni cannot wholly correct the defect.

3. In high degrees of convergent squint, when double advancement and resection of the externi cannot restore the eyes to parallelism. In the latter instance, converging power will be wholly

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*Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 2, 1923.

sacrificed in order to produce good cosmetic results. This must be seriously considered before the operation is undertaken.

Tendon Tucking: Tendon tucking, if correctly performed, is of some value. The results obtained in moderate degrees of squint are often gratifying. In other instances, the end results are disappointing. As a surgical procedure, the technic is simple, and it therefore appeals to the young operator. If the operation fails, the patient at least is no worse than before operation. It is assumed that the sutures are properly placed, so as not to constrict the circulation and produce a necrosis or slough with a consequent conversion of the squint into one of opposite type. The writer believes that such a result is unwarranted, and is due entirely to poor surgical judgment and technic, and should not be charged against the operation of tucking, per se.

The advantages of a tuck are: First, it appeals to the patient because the muscle is not cut. Second, it is more easily performed than a resection, and therefore, is probably a safer operation in the hands of the beginner than resection. Third, it shortens the period during which both eyes are bandaged, and also the convalescent period.

The disadvantages from a surgical and mechanical standpoint are: First, it is uncertain in the results obtained. This may be due in part to poor surgical technic, but more often it is due to the fact that after the suture material becomes absorbed, the overlapped surfaces may not properly adhere, and the operation may fail. Second, it is not suitable for squint of high degree. This applies especially to divergent squint. It is difficult to overcome large divergent defects because of the limitation of the field of operation over the internal rectus. Third, in some instances a permanent thickening over the site of operation remains. This latter objection is invalid in a majority of instances when only moderate degrees of correction are necessary. In these milder cases the cosmetic results are all that could be desired. In large tucks a permanent and often disfiguring lump may remain.

Resection with Advancement: Under this heading may be included simple resection, a simple advancement, and a combination of both. A resection consists in shortening of the tendon by excising a portion and reattaching the distal cut end to the old tendon insertion. A simple advancement is performed by severing the tendon at its attachment and reattaching it nearer to the cornea. A resection with advancement consists in excising part of the tendon and attaching the distal cut end nearer to the cornea than the old tendon's stump. Resection and advancement are about equally efficient, and are suitable for moderate degrees of squint. Resection with advancement insures maximum results, and is applicable to squint of high degree.

These operations may be divided into two groups: First, those which include the conjunctiva, capsule and muscle; and second, those in which the muscle only is resected or advanced. While many operations have been devised in both groups, from a mechanical and surgical standpoint the operations in the first group which include the conjunctiva, capsule and muscle, are regarded as most efficient and reliable. This fact is of much importance, because the only serious objection to this plan of operating is the possibility of failure due to the slipping or cutting through of the anchor sutures. The technic is more difficult than either tenotomy or tucking, but when once mastered, one may always expect permanent results.

A simple resection is most satisfactory, providing the angle of squint is not too large. The attachment of the resected tendon to the old stump is easy, and in this operation there should be no failures. The attachment of an advanced tendon nearer to the cornea is a little more difficult. If the operator will see first that the needle is sharp and smooth; second, that the bite is taken in superficial scleral tissue so as to give a good firm attachment before perforating the conjunctival tissue; third, that the eyeball is rotated by an assistant towards the cut end of the resected tendon when the sutures are tied; and fourth, that both eyes are bandaged for at least five days after operation and the patient is kept quietly in bed, he will have no occasion to fear that the tendon will slip by a cutting through of the sutures.

A second objection which may be raised against this method of operating is the length of time required during which the patient must remain in bed with both eyes bandaged, and the somewhat prolonged convalescence. While this is a factor to be considered, the efficiency of the operation, the fact that the end results are the same or better than those observed on the operating table, if the operation is performed under local anesthesia, more than counterbalance the objections to the operation.

For those, therefore, who wish to acquire good surgical technic in muscle surgery, resection with or without advancement is the operation of choice.

Application: The application to clinical types of squint encountered is easily made. The objects which the operator hopes to obtain by operating in either convergent or divergent squint are: First, comfortable, single, binocular vision if the fusion faculty is present, or even deficient; second, failing in the first object, the operator seeks to obtain straight eyes cosmetically. In convergent squint a third object is of no less importance, namely, proper converging power in order that the patient's near point may be comfortable. This is particularly important for one who must spend much time working at the near point. In view of the fact that a large percentage of operations for squint are performed on children, this latter point is not always given due consideration. How materially failure in this last reason for the operation affects the future of the child vocationally can only be surmised. That many are doomed to much physical suffering throughout life can be vouched for by the records of any busy ophthalmic surgeon.

The convergent types of squint are the more numerous. Before an operation is undertaken, the surgeon should clearly determine whether each one of these three objects can be obtained by proper surgical procedures. If one eye is hopelessly amblyopic, only a cosmetic operation is indicated. The surgery may therefore be confined to one eye. First choice is resection with an advancement, depending upon the angle of squint. If this does not suffice, a tenotomy of the opposing muscle in the same eye will be justified.

If the vision is equally good in both eyes and fusion is good or even subnormal, the three objects sought can be obtained by correct methods. In this instance the surgery should be divided between the two eyes, and the operations should be limited to resections with or without advancements. Tenotomies should never be practiced on this type of case. If the angle of squint is small, resection may be replaced by tendon tucking, but in the writer's judgment this is inadvisable.

What can be done for true alternating convergent squint? A careful study of the fusion faculty in this group will usually reveal a total absence of any desire to fuse. Only cosmetic results, therefore, can be hoped for. Even though the fusion faculty is absent, the surgery should be equally divided in the form of resections and advancements, and tenotomies should be avoided.

Divergent squints differ from convergent squints, first, in that they are more difficult to correct fully; second, in that they occur later in life; and third, in that there is little danger of overcorrection by operation.

Tenotomies of the external recti will accomplish little in themselves. When, however, they are combined with free resections and advancements of the interni, the results are considerably better than without tenotomies. In a majority of instances, therefore, when the divergence is 35° or over, the externi may of necessity be tenotomized to obtain results. The presence or absence of hopeless amblyopia in one eye, will be the guide here as in convergent squint, as to whether both eyes shall share in the surgery or one eye alone shall be operated on. One cannot hope, however, to correct more than 25° by operating on one eye alone.

The writer has never seen but one case of divergent squint converted into convergent squint by a tenotomy of the external rectus. The danger, however, exists. Defective external rotation has been frequently observed. It is, therefore, not without danger, and should be avoided in all cases which can be corrected by resections and advancements of the interno regardless of whether one eye is or is not amblyopic.

Tucking of the internal rectus is difficult and rarely is corrective of more than 15.°

About a year ago, in a paper read before the Ophthalmological Section of the A. M. A., the writer was impressed with a statement made by the authors, that only cosmetic results could be obtained in the vast majority of patients. If this statement of the case is to apply to all operators, the question is open for debate. The responsibility of the surgeon does not end with the completion of the operation and the convalescence of the patient from the wound. At this time there should be instituted as rigid, nonsurgical treatment as that properly practiced before operation. If a fusion faculty is present, although undeveloped, and amblyopia is not too great in degree, the ultimate success of the operation will be determined by the after-treatment with amblyoscope and stereoscope. Few operations in muscle shortening can be performed with such precision that single binocular vision is immediately obtained. Such results would be for the most part accidental and not the outcome of the surgeon's accurate judgment. What has been accomplished, however, by the operation is the bringing of the two images within reach of the fusion faculty. If the fusion faculty is well developed, some eventually obtain single binocular vision without the aid of special training. A majority of cases will need careful training and even those in whom the fusion faculty is well developed will be much improved by careful and prolonged after-treatment.

DISCUSSION

Dr. Burton Chance (Philadelphia, Pa.): Dr. Peter has given us so concise a statement of what he regards as the best principles for the surgical treatment of concomitant squint, that it would be difficult for me to comment upon his paper without repeating much that he has already detailed, for in the main, I quite approve of his principles. He has accordingly listed the merits of advancement, of resection of the weaker muscles, and the demerits of tenotomy of the opponent muscles.

Two points in his paper cannot be stressed too much. The first is the failure of simple tenotomy to cure in the case of functioning eyes; and the second is the importance of early and persistent systematic "orthopedic" visual and accommodation exercises in all cases after operation.

What a vast amount has been written concerning the treatment of squint, since von Graefe published the effects of his first tenotomies! And, what a diversity of results has become manifest in the experience of his successors! It is illuminating, and humbling too, to read the minute directions which von Graefe gave for the performance of what many now regard as a trifling procedure.

It is seldom that one sees in practice an exact following of the directions laid down by the devisers of operations. Especially is this true in the case of surgery of the muscles of the eye. It is, therefore, to be expected that the results of others' operations cannot be the same as those the originators obtained.

It has seemed to me that the best effects have been obtained when a surgeon has adopted a single, and if possible, a simple operation and has consistently maintained that operation, developing and perfecting his technic, so that it might be applicable to any case arising in his practice.

Dr. Fred Fisher (Erie, Pa.): Dr. Peter's paper has given us a very good review of the surgical principles of squint. But there is one thing we must stress in these children who develop squint, we must get them early, refract them carefully under atropin and the retinoscope, and get them just at the period when their fusion sense is beginning. Oftentimes careful refraction followed by the use of the stereoscope cuts down the number of operations we will do, and sometimes, even if these children are well along in years, careful refraction and careful fusion sense training will reduce the number of operations we do. Fifteen or twenty years ago the tendon snippers began their work every time they saw an eye that turned in. Possibly the eye was fairly straight at that time, but now we see so many of these tenotomy cases that have the eyes turned out and are worse off than they were before. This cannot be stressed too much, because men are still doing a tenotomy of the internal rectus. It is an excellent thing to strengthen the muscle, but you must not weaken it too much. Always remember that when you have operated you have just begun. You must continue your stereoscopic work a long time if you are going to bring results.

Dr. William C. Posey (Philadelphia, Pa.): I wish to speak particularly of the choice of advancement operations. For many years I was not satisfied with the advancement operation which I did. Then I happened upon the single stitch advancement operation of Dr. Jackson, to whom we owe so much in ophthalmology, and I used that, advancing the resected muscle in common with the conjunctiva and capsule into a position nearer the cornea. In many cases, however, this single stitch did not hold, so I now employ a double mattress suture, pulling forward the resected muscle, the conjunctiva and the capsule into the new position. I have done this operation a great many times in the past four or five years and I am more and more pleased with it. It holds the muscle; also the removal of the stitch is a simple matter, which is not always the case with many other forms of advancement operation, notably the Worth operation.

Unfortunately, in many of our cases the results of operation are interfered with by anomalous position of the eye muscles in their insertion into the eyeball. These anomalous insertions we cannot foresee. Everything seems to be going all right, there is the desired overcorrection for eight days, we will say, and then the eyes begin to slip back into their old position. In many cases it was in former years my practice to tenotomize the antagonistic muscles when the muscle at fault was advanced. More recently, however, I have not tenotomized the antagonistic unless I found at the end of eight or nine days that the eyes were slipping back into their old faulty position, in which event tenotomy is performed.

Dr. William Zentmayer (Philadelphia, Pa.): I am a strong advocate of the advancement operation over tenotomy, but I want to utter a word of caution. I think it would be a very good thing if the operators were to put on record the bad effects they have seen after advancement. We have knowledge of two cases in which the eye was lost from an advancement operation, and I know from my house doctors that iridocyclitis following an advancement operation is not rare. It has been shown by Dr. Wells of Boston, by experimental work on animals, that in a vast majority of cases where a suture is introduced into the sclera, as in the human, the needle went through the sclera. I believe that must occur quite frequently in our operations, and it is only by following a very careful technique in our surgery that such results can be prevented. I think this should be emphasized before the Section where there are younger men who are just beginning to do surgical work on the muscles.

Dr. Peter (in closing): It was not within the scope of the paper to mention any special operation, but both Dr. Chance and Dr. Posey have emphasized the fact that every man should select his own operation and acquire its technique and stick to that operation. Then I think the failures will be very few.

I am also glad to know that there is somebody else rising in defense of advancements and condemning tenotomies. If there is one thing that seems to me to be poor surgery on the eye muscles, it is a tenotomy. If tenotomies were abandoned except in the very few instances in which they are justified, I believe our work would be very much better.

As to Dr. Zentmayer's criticism, which is fair and just, I think there is a remedy for that. The students sometimes look askance when they see me begin to operate with bifocals, plus 4 with a 4° prism base in. But after a man is thirty years of age, his accommodation begins to wane and he has no right to do eye surgery without proper glasses in order that his range of vision may come close to the eyeball. Surely this is correct in so far as intra-ocular surgery is concerned. In the introduction of a suture into the eyeball in muscle operations we ought to see very accurately what we are doing; then the danger of iridocylitis from perforation of the sclera is very slight.

THE ROLE OF IMPACTED AND UNERUPTED TEETH IN OCULAR DISORDERS*

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When one considers the wide distribution of the trifacial nerve and remembers how richly it innervates the eye as well as the teeth, it is not surprising that ocular disturbances due to dental pathology frequently occur.

These disturbances may be brought about in two ways; first, through nervous reflex irritation; and secondly, through hematogenous infections.

The ophthalmic division of the trifacial sends branches to the lachrymal gland, conjunctiva and to the skin of the outer canthus by the lachrymal nerve. The frontal division supplies the upper lid, forehead and scalp, while a branch extends to the bridge of the nose and the inner canthus. The nasal branch gives off the long root of the ciliary ganglion, the long ciliary nerves, supplies the skin of the root of the nose and the eyelids, and communicates on the face with branches of the facial nerve.

Through the three ganglia placed on the three divisions of the nerve not only do important innervations result but communications are also effected with the sympathetic system, with the third nerve through the lenticular ganglion and with the facial nerve through the sphenopalatine and otic ganglia.

Reflex irritation from the teeth may not only result in irritative and trophic disturbances in the eye but may cause as well motor disturbances, interfering with the functions of the internal and external ocular muscles.

The great importance of focal infections in the oral cavity as related to ocular disease, is receiving the attention it justly deserves, as predicted by the writer seven years ago in discussing Dr. Fulkerson's paper before the American Academy of Ophthalmology and Otolaryngology in 1916. It is, however, with regard to the reflex irritation between impacted or unerupted teeth and the eye that the following case records are submitted.

Case I, Asthenopia: Miss M. A., age 30, refracted in my absence by my associate, Dr. Van Kirk, February 13, 1915. Under homatrophin, R. + 2.50 S. ○ + 1. Cyl. ax 120° = V 6/4 —. L. + 2.50 S. ○ + 1. Cyl. ax 75° = V 6/4 —. A full correction was ordered and worn for two years with more or less comfort, when she was again refracted with practically the same result, but had developed 1° right hyperphoria. A full correction was ordered with prism added. She returned in three months, stating that all use of her eye was followed by severe neuralgic pains in her left eye.

In spite of the fact that she recently had had extensive dental work done, an x-ray of her teeth was ordered, which revealed an unerupted and impacted left lower third molar.

Prompt relief was experienced from the pain in the left eye following extraction of the tooth. At her last refraction, October 16, 1922, she stated she had enjoyed perfect comfort with her eyes ever since the tooth had been removed.

Case II, Asthenopia: Mrs. N. A., age 31. Appeared January 4, 1919, stating that her eyes ached continually. Under homatropin, R. + 0.25 S. = V 6/4, L. + 0.62 S. = V 6/4. Media clear and fundi negative; ½° exophoria distance, 6° exophoria near. Glasses were ordered and orthoptic exercises given, the latter greatly aggravating the complaint when practiced. In March of the same year she complained of intensified pain in her right eye after stooping over. Referred to Dr. A. A. Maclachlan for sinus examination. X-ray and transillumination of all sinuses negative. X-ray of teeth followed, revealing the presence of an unerupted right upper third molar and an unerupted left upper third molar.

The teeth were extracted with great difficulty and the patient suffered intensely with her jaw for weeks afterwards. However, after a complete rest in Canada during the ensuing summer, she returned, stating that her eyes had ceased to trouble her entirely.

Examination of her ocular muscles showed orthophoria, indicating that her ocular discomfort had been caused solely by faulty muscular coördination.

Case III, Asthenopia: Mrs. C. B. F., aged 45, July 18, 1917. Under homatropin, R. + 2.50 S. = V 6/4, L. + 2.50 S. = V 6/4. Orthophoria distance, 2° exophoria near. A full correction with + 1.25 S. segments ordered. In a year the segments had to be strengthened to + 1.75 S., and two years later, at the age of 48, plus 2.50 segments were necessary to enable her to read. At the same time she developed 12° exophoria near with practically orthophoria for distance.

She was given tr. nux vomica in ascending doses and a weak solution of pilocarpin locally which gave her some relief; but accommodative power was so low that an intermediate segment of + 1.50 S. had to be ordered for housework.

Her asthenopia for near persisted. Muscular exercises gave no improvement so that prisms, bases in, were ordered in a separate pair of reading glasses. These she could wear only for short periods and in fact suffered continually when attempting near work.

The teeth were x-rayed and all proved healthy and sound. However the upper right second bicuspid was found to be unerupted, its crown impinging on the foot of its fellow bicuspid and the neighboring first molar.

A clever dental procedure removed the offending bicuspid by a flap operation through the outer wall of the upper jaw. The relief this patient experienced from her asthenopia was miraculous. The exophoria for near promptly disappeared and her permanent correction, which she now wears with absolute comfort at the age of 51, is R. and L. + 2.25 S with + 2. S. segments added.

Case IV, Neuralgia of Eye: Mrs. M. J. D., age 25, appeared April 15. 1919, with a history of intense pain in her left eye for the past three days. The day before she had consulted a physician who diagnosed the condition iritis. The pupil was found to be widely dilated, due to a mydriatic used the day before; the media were clear and the fundus negative. There was no injection of the globe. Tension in each eye was 26 mg. Following the instillation of the mydriatic the eye became so painful that the patient could not sleep that night.

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*Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 2, 1923, with lantern demonstration.

She was given bromides, and pilocarpin was used locally with some relief, but the pain persisted. April 20, she was referred to Dr. George McKee for frontal sinus examination which proved negative. Her teeth were then x-rayed, showing the absence of all upper molars with the exception of the third on the left side which lay transversely in the jaw and had never erupted.

The tooth was removed with some difficulty, the operation being followed by the most gratifying results. Pain in the left eye gradually ceased. A week later the eye was entirely comfortable and has remained so.

Case V, Punctate Keratitis: E. B., a girl nine years of age, appeared April 15, 1914, with her left eye intensely irritated and painful due to a superficial punctate keratitis. The entire cornea had a dull look and was dotted with a dozen or more grayish deposits just under the epithelium and which raised the epithelium slightly.

The child was undernourished, so that in addition to atropin and dionin locally she was given syrup of the iodid of iron and thyroid gland for a period of six weeks. Her tonsils and adenoids had been removed earlier.

The ocular condition showing no improvement, it was suggested that her teeth be x-rayed. The relationship between ocular disease and focal infections in the teeth was fully recognized at this time, but the possibility of it occurring in a patient so young seemed remote. However, the pictures were taken and an unerupted and impacted cuspid on the upper left side was discovered. The tooth was removed and relief from irritation in the eye was almost instantaneous. In a short time the deposits in the cornea disappeared entirely. At a recent visit, August 25, 1923, under homatropin the vision in this eye with + 4.50 Cyl. ax 90° = 6/6 —.

Case VI, Punctate Keratitis: A. E. M., age 27, appeared July 6, 1914, with the history that his left eye had been sore and inflamed for three months. From his statement he had consulted every ophthalmologist in Pittsburgh without relief and can therefore be classed as a "drifter."

His eye presented a markedly congested conjunctiva with very little discharge but intense lacrimation and photophobia. The cornea was not as dull as in the preceding case but he had the same punctate superficial keratitis, several of the nodules having broken through the epithelium, these areas staining with fluorescein. His teeth were x-rayed and the lower left third molar was found to be unerupted and impacted. Removal of the impacted tooth was followed by prompt subsidence of the photophobia and lacrimation. Under the use of 5% dionin solution and hot compresses the corneal epithelium reformed and the deposits in the cornea disappeared.

Case VII, Acute Glaucoma: C. E. P., age 52, was seen in consultation with Dr. Kuehner December 20, 1920, the patient being in bed convalescing from his third attack of facial erysipelas. The left pupil was dilated, the cornea hazy, globe injected and the eye painful.

Tension of the sound eye 24 mg., of the left eye 55 mg, recorded the next day after 16 hours' use of pilocarpin. The field was markedly contracted, central vision with his correction + 7. D. Sph. = 6/30.

In a routine examination of his nose, accessory sinuses and teeth to find a hidden depot for his facial infection, it was discovered that his third left lower molar was lying horizontally, the upper, posterior aspect of the crown was eroded and the entire tooth was surrounded with a shadow.

The tooth was extracted and the cavity curetted. The field on January 3, 1921, had returned to normal; central vision had improved to 6/10 —, and the tension of the left eye was 28 mg.

He reported monthly for observation until September, 1922, when he left Pittsburgh. His vision improved to 6/7 —, the field and tension remaining normal.

From a study of these case records, the x-rays of the teeth and the postoperative dental findings, the convincing fact is apparent that mechanical pressure anywhere in the course of the trifacial nerve may cause functional, trophic and inflammatory phenomena in the eye and its appendages. The importance of removing unerupted or impacted teeth, when found in searching for focal infections, is paramount to removing diseased teeth. For it is altogether probable that diseased conditions may follow the malposition of the teeth and reflex irritation be followed or accompanied by hematogenous infection.

DISCUSSION

Dr. Geo. B. Jobson (Franklin, Pa.): Dr. Stieren's instructive paper reminds us very forcibly of the interrelationship between the different branches of medicine and surgery. It is recorded that as far back as five hundred years before the Christian era some medical men devoted themselves to dentistry along with their medical practice. As the medical and surgical specialists developed along their respective lines, dentistry became divorced from the domain of medicine. It was not until Sir William Hunter, a medical man of England, came out with a strong statement in 1911 to the effect that many of the ills of humanity were traceable to oral infection, that the medical profession focused its attention on the importance of the teeth as a possible factor in the production of some systemic diseases. In checking up on an obscure eye case the radiographer and dentist should be consulted and their findings carefully considered before making a diagnosis. Radiographic examination enabled me to discover impacted teeth as the cause of eye trouble in two cases, one of punctate keratitis, the other a case of uveitis. The source of these conditions would otherwise have been overlooked.

The knowledge that impacted or unerupted teeth are factors in the production of ocular diseases is of comparatively recent origin, and our thanks are due to Dr. Stieren for his clear exposition of this subject.

Dr. George E. de Schweinitz (Philadelphia, Pa.): I think Dr. Stieren has done wisely to bring this matter to our attention, because occasionally an unerupted tooth appears to be the cause of an otherwise obscure ocular condition. If infection is absent, such a tooth may be harmless, except that it may cause neuralgia, asthenopia, and reflex symptoms of various types. But it is a fact that a certain number of these unerupted teeth are associated with infection, and in these circumstances the ocular lesions must be credited to the infection. In a recent case under observation for some time, the patient, a child of about ten years of age, with advanced retrobulbar neuritis and practical blindness, rapidly completely recovered after an unerupted tooth, surrounded by a cyst-like area, which contained the usual pyogenic germs, was removed.

In a second patient, also the subject of retrobulbar neuritis, one eye was totally blind from optic nerve atrophy, and the other showed a large central scotoma. As no cause could be found, an unerupted molar was removed, followed by rather rapid improvement in one eye; the other was not favorably influenced. Such patients must be watched, as in later years they may develop multiple sclerosis.

In another case, also recently observed, the patient, a man in middle life, with a curious form of choroiditis and vitreous opacities, rather rapidly recovered after a noninfected unerupted tooth was removed. But for a long time prior to this operation, he had taken large quantities of mercury and iodids. He was not luetic. In such circumstances it is difficult to decide whether the entire credit for the cure should be given to the removal of the tooth.

The point which Dr. Stieren makes is important; not only must we look for the ordinary carious teeth and apical abscesses, but we must take into consideration unerupted teeth, and also the fact that occasionally such teeth are associated with the same kind of infection which so frequently exists in the erupted teeth, and therefore may be active exactly as they are.

Dr. William Zentmayer (Philadelphia, Pa.): What I have to say has no scientific value, but as the history of neglected teeth in their relation to the general organism has been touched upon I want to mention an interesting point. An army officer who was in England during the war, having some spare time, went into the British Museum to look over a volume of Benjamin Rush, and found this statement: that Madame So-and-So came into his office one morning with a swollen face and a severe rheumatic affection in several joints. He advised her to have a tooth extracted, not because he thought she would get relief from the synovitis, but to relieve the local trouble. Much to his surprise in a day or two the synovitis was entirely relieved, and he makes this interesting comment: "I believe if we were to examine the teeth of more of our patients afflicted with chronic affections we would find they have an etiologic bearing on these chronic affections."

It is interesting that Benjamin Rush made this observation over a century ago and that it had been entirely forgotten in the intervening years.

Dr. Edward Jackson (Denver, Colo.): Two cases under observation at the same time, following them several years before they were relieved, and having known them several years after, forced on me the fact that low accommodation might come from unerupted teeth.

One was a young lady of thirty who had four unerupted molars. No infection was found, but the removal of these molars not only caused a very decided increase of her low-power accommodation, but ended her very frequent complaint that her glasses required readjustment.

The other patient was between thirty and forty. She had two unerupted wisdom teeth, and their removal produced similar results. In that case there seemed to be an accidental infection after the removal of the teeth. There was no evidence of infection about the teeth at the time of removal. She suffered for several months with chronic periostitis, great thickening of the jaw and a very sore face. After a year or two she recovered completely. This illustrates the fact that where we are going to do an operation, even if everything seems favorable, we must remember the complications that may follow operations; as we had illustrated in the discussion of squint.

ICTERUS NEONATORUM AND ITS RELATIONSHIP TO THE MATERNAL BLOOD STREAM*†

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Icterus neonatorum is definitely one of two varieties, either pathological or physiological. If pathological there is usually a lesion demonstrable in or about the liver, such as congenital absence of bile-ducts or some lesion preventing the entrance of bile into the intestine. If the jaundice be due to a pathological condition the icteric condition appears either at birth or directly afterwards and the coloring rapidly becomes more intense until death ensues. The other variety, the physiological, appears generally about the third or fifth day, lasts for several days, and then disappears with no particular interference with the infant's welfare. The incidence varies and the wide divergence of figures from many observers merely indicates the variance in the observer and his keenness in detecting the icteric change.

The theories of causation are many and varied and are increasing in number as the years go by; but for all practical purposes the theories may be divided into two main groups, anatomical and physiological. The best known of the anatomical theories was suggested by Quincke[1] many years ago and it has been restated and accepted of later years by Von Reuss and Heubner. This theory is that the jaundice is due to a transference of bile pigments from the meconium in the intestines to the blood stream by the route of the patent ductus venosus. Normally of course, bile pigments are absorbed in the portal blood and thus brought to the liver, but if some of the pigment enters the blood stream by the route of the ductus venosus then the blood stream is overloaded and icterus results. It is well known, as Kolliker demonstrated many years ago, that the gall-bladder early appears in the fetus and shows some secretion from the third month onwards. During fetal life there is apparently no need for the bile to act either in an antiseptic way or as an aid to digestion, hence there is a comparatively small amount of bile secreted. The biliary secretion is of a mucoid character and not before the fifth or sixth month can bilirubin be demonstrated. In the small intestine, between the third and the fifth months, in the precursor of meconium, Zwiefel[2] demonstrated bile acids and bile pigments. The amount of bile elaborated during fetal life is small; the balance is preserved through the blood streams, and perhaps the placenta has a part in digestion.

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The theory as previously stated is apparently untenable, for the jaundice will still occur even though meconium be promptly passed. The large amount of pigment present in meconium is biliverdin and spectrophotometric analysis of the blood of the cord shows no biliverdin present. Bilirubin may be fed by mouth to infants or young animals and yet the pigment cannot be demonstrated in the blood stream. Some cases of icterus persist for days despite the fact that the ductus venosus is completely obliterated.

I believe that the explanation of icterus neonatorum is to be found in a combination of fetal blood destruction and the action of fetal liver. The metabolism of iron products in the body must always be considered when we are dealing with bile pigments. The fetal supply of iron is derived to a large extent from maternal hemoglobin and the other soluble iron combinations in maternal blood. In the normal mechanism the iron not employed in the body is excreted largely through the intestine and to some extent through the urine. The growing fetus must use its blood stream and placenta to excrete the surplus products it does not need or utilize since the fetal intestine and kidney are relatively inactive. The placental villus in a rather striking way resembles the intestinal villus and the added research which is rapidly accumulating constantly points to the fact that their functions are similar. We were able to demonstrate in a former paper[3] that little or no iron was being excreted by way of the meconium or amniotic fluid but that all placentas showed a varying amount of iron. The iron content of placentas was determined by carefully excluding all gross blood present in the placental circulation, drying carefully and then by comparison with known standard iron solutions, the amount of iron present was at once known accurately and immediately. We were surprised to find that there seemed to be a relationship of some sort existing between the iron found in dried placental tissue and the appearance and extent of neonatal jaundice. When the iron placental content was twenty-eight milligrams per hundred grams of dried placetal tissue, jaudice would appear, and when the figure rose to thirty-nine milligrams of iron the icteric condition became intense. The icterus seemed to be independent of temperature or weight changes. We were able to demonstrate that bilirubin was present in the blood stream of every infant and that the pigment was of the hemolytic type, by use of the so-called second reaction of Van den Bergh, rather than of the obstructive type. This particular test is sensitive both qualitatively and quantitatively for bilirubin, and if the reaction is positive in both the immediate and delayed reactions it is of little use in determining whether the jaundice is hemolytic or obstructive, but if positive only to the delayed reaction it is fairly evident that the hemolytic type of jaundice only is present. In all the infants we tested we found bilirubin present both in the cord blood and in blood taken at a later date. Despite the fact that bilirubinemia was present in every infant, nevertheless all infants were not jaundiced, hence the mechanism could not be purely a hepatogenous affair but rather a hemohepatogenous one.

There has always appeared to be a relationship between the decrease in the erythrocytes directly after birth and the appearance of icterus. It has been repeatedly disputed as to whether there is an actual destruction of red cells or whether the drop in count is not merely apparent rather than real. The refraction curve of the infant blood stream during the first few days of life shows a definite rise as the infant weight drops, the rise no doubt being due to the blood losing water which is in turn taken up by the tissues. Since the blood loses a certain definite amount of water in the first few days of life we would expect an increase in the cell count instead of a diminution but we actually have the lowered count. The refractive curve rises slowly as the weight returns to normal and the blood to its normal dilution. We felt that during fetal life the surplus iron was stored in the placenta and at birth the fetal liver took up the load, practically a new function since during fetal life the secretion of bile takes place directly into the blood stream but after birth it begins to come through the normal adult channels, and with the increase of hemoglobin coming from the break up of red cells there is more bilirubin than can be handled readily and the jaundice results.

Two questions immediately arise: Does the maternal blood stream have an increase in bile pigments which are transferred and does the placenta possibly function in any way to break up the fetal bilirubin and store its iron in any fashion such as would be indicated by the varying amounts found in the placenta?

We tested the blood of seventy mothers, fifteen while in labor, the others between the fifth and ninth months of gestation, for bilirubin after the Van den Bergh method. Five cases were markedly positive and of these, three were positive Wassermanns, one was a severely toxic case and one a case which had been in labor for hours. None of the babies were jaundiced. Nine others were also faintly positive and of these, two had been eclamptic before delivery in previous labors, two were severe vomiting cases, one had had a cholycystectomy eighteen months previously, and the other five had nothing remarkable in the previous history. All these patients had a hemoglobin reading of seventy per cent or more. One of the babies had mild jaundice; the others were negative. One patient of the remaining fifty-six was interesting. The mother would have apparently acute gall-bladder attacks and would develop a slight jaundice which would last for a few days, but the infant was born without jaundice and did not develop it. Twelve of the fifty cases left showed only mild degrees of jaundice. These observations are in agreement with the experimental work of Kehrer, who showed that ligation of the common bile duct in pregnant animals would not cause fetal jaundice although it would cause maternal jaundice. It is apparent that there is no demonstrable rise of bile pigments in the maternal blood stream and that there is no transmission through the placenta.

Placentas were taken as soon as born and the gross blood was washed away and then tested for hydrobilirubin in the cord blood. The placenta itself was then extracted for twelve hours with water. The watery extract was cleared as far as coloring was concerned in exactly the same way as blood samples are in doing the ordinary blood chemistry. The extracted filtrate was made just faintly ammoniacal and then saturated zinc chloride was added. Each time we obtained the green ring and the reddish opalescence due to transmitted light, demonstrating that hydrobilirubin, or in other words, a split product of bilirubin was present. The result of such a test would seem to indicate that the placenta was actually splitting the bilirubin carried to it in fetal circulation and would also seem to bear out the hypothesis that the iron was stored as a result of the breakup of the bilirubin. It has been shown that in fetal blood there is comparatively little bilirubin circulating, so that there would not be a requirement for large activity on the part of the placenta. This finding would also seem to bear out the analogy between the placental villus and the intestinal villus and demonstrate that in certain lines the placenta was practically carrying out a digestive function in breaking up bile pigment.

There is one other factor which may also play a part, although it may be too hypothetical. Whipple[5] has shown that a sudden change of diet may relatively increase the bile pigment as much as fifty per cent. For example, in the case of dogs, if they are suddenly shifted from a meat to a carbohydrate diet there is an immediate rise in the bile pigment. The explanation is that a meat diet is normal for dogs and the increase in bile pigment due to a carbohydrate excess is the result of an abnormal or alterative reaction and a deviation of pigment elements and construction into bile for elimination. Bohr[6] has shown in the respiratory exchanges in the mammalian fetuses by the determination of the oxygen consumption and carbon dioxide production in pregnant rabbits and guinea pigs, before and after and during compression of the cord, that the respiratory quotient is *one,* indicating that the substance being oxidized is largely carbohydrate, probably glycogen. The work of Benedict and Talbot[7] on the respiratory quotient of the newborn shows that during the first eight hours the figure is 0.80, and subsequent to the tenth hour was less than that. Since the R. 2. of 0.71 shows that the substance burned is fat, the conclusion in regard to the newborn infant must be that the uterine supply of glycogen is being exhausted and they begin, much as the adult, to utilize their fat supply, a food which is new to their body mechanism, probably not at all used during fetal life as food. As soon as the maternal milk supply is established the respiratory quotient approaches *one* again; that is, the glycogen supply has been replenished. It would be of interest in this connection to discover whether in the clinics which routinely employ glucose after delivery there is a greater or lesser degree of jaundice than in the clinics which do not.

CONCLUSIONS

1. There seems to be a relationship between placental iron and icterus neonatorum.

2. There is no relationship between the icterus and the bile pigment content of maternal blood.

3. There is no evidence that there is a transfer of maternal bile pigment to the infant blood stream.

4. The fact that traces of split products of bilirubin are found in the placenta would strengthen the belief that the placenta splits the bilirubin of the fetal blood stream and stores the iron.

5. The sudden change from a glycogen to a mixed fat and glycogen diet might be an added factor in the production of jaundice.

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DISCUSSION

Dr. Henry T. Price (Pittsburgh, Pa.): I am not capable of discussing physiological chemistry, but I have been very much interested in Dr. Williamson's work, and I think the information presented will help solve this problem of jaundice of the newborn for the pediatrician. Unfortunately, Dr. Williamson's paper has brought out that it is up to the pediatrician to carry on this investigation and learn the effect of this condition in the newborn with relation to serious infection, which we all know is the cause of great infant mortality. I think that further study along this line will help us considerably in separating the benign cases from the malignant ones.

We are to be complimented on having Dr. Williamson read his paper before the Section.

Dr. Paul Titus (Pittsburgh, Pa.): I have been very much interested in this work of Dr. Williamson's, and in connection with the remark of the Chairman, it is apropos to say that Dr. Williamson is not a physiological chemist but a very practical obstetrician, and that this does have a very practical bearing. His theory is certainly ingenious and I believe is very near the truth, although the cause of jaundice in the newborn has been studied for a good many years. As a general thing, it is not a particularly important matter whether a baby has a bit of jaundice or not.

There are, however, one or two important points that occur to me in connection with this paper. In the first place, there is the more or less unnecessary custom of giving a baby a purge of some sort—castor oil or divided doses of calomel—because that child happens to be jaundiced. The necessity for that has been thoroughly taken care of by Dr. Williamson's statements. Another point is that many babies are potential "bleeders," and the reason for this is considerably clarified by what Dr. Williamson has said.

While the paper seems technical, it does have a practical bearing, and I think there are some interesting points to be gained from the work he has done. It is just this sort of work on placental interchange between mother and fetus which is gradually clarifying some of our more obscure ideas on fetal life.

Dr. John M. Higgins (Sayre, Pa.): I wish Dr. Williamson would analyze a little from a clinical standpoint just how we are first going to recognize the difference between the pathological and physiological.

Dr. Williamson (in closing): The type of jaundice that we are discussing here of course is the usual type when there is no anatomical anomaly or serious pathological condition present. As previously remarked, this work is the result of the earlier paper when almost by accident we discovered apparently a connection between the iron content of placentas and the jaundice of the newborn. If the theory is correct that there was a real relationship, then we would have to prove that there was no definite change in the maternal blood stream and we would have to account for the fact that the infants were not icteric when born; that is, there either must be a mechanism providing for the disposal of the pigment before birth or else there was a deal less of the pigment formed. In examining the placenta for decomposition products of the bilirubin we were therefore following a logical sequence. In the adult we know that hydrobilirubin is found in the intestine, with bacterial action playing a part. Hence in the fetus, the placenta showed evidence of activity and we felt that the theory was confirmed when we found on several occasions evidence of the presence of hydrobilirubin, or in other words split products of bilirubin.

This work is yet to be checked up, to be certain, but it surely seems that we are on the right track and that the placental mechanism and iron deposition are closely linked with the phenomena of icteric conditions in the newborn.

THE PHYSICIAN'S OPPORTUNITY IN THE PREVENTION OF DISEASE IN CHILDHOOD*

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Rapid changes are taking place in medicine, and there is no branch of medicine in which this has been so noticeable as in that part which has to do with the care of children. The most marked development has been the increasing interest in what is termed "social medicine." Knowledge of social conditions is essential in the diagnosis, treatment and prevention of disease in children.

The prevention of disease is greatly affected by the social condition of the family. Poverty results in malnutrition in childhood. Overcrowding in the home, which exists so widely throughout this country at the present time, always affects injuriously the health of children.

To-day, the physician who fully realizes his opportunities to practice preventive medicine must be informed with regard to the elements of sociology, applied physiology and psychology. The general practitioner should be well qualified to practice preventive medicine because of his intimate knowledge of the family, of the home, the environment, and even frequently the child's playmates. There is every reason why he should be able to make an accurate social diagnosis of the family and know the child's mental peculiarities. In other words, he is the one person who is fully equipped with a complete knowledge of the whole child. He is in a position to give the proper medical care when sick, and to continue the supervision of the child after it is cured. If he will demonstrate to the family an interest in preventive medicine, he will be consulted by the family much more frequently than the physician who is only interested in curative medicine.

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Until recently, the physician has looked upon a child only with the thought of curing him of a disease, but to-day attention is focused on the child himself rather than on any one particular disease. It is not only the cure of a temporary illness which the child may have, but it is the restoration of the child to normal health, in order that it may not again become ill from the same or some other preventable disease.

Psychology is the corner stone of the foundation of health education. Most patients are in need of behavior education, and the person best qualified to give them this instruction is their own physician. The child must be taught to conform to his environment, but the physician has the greatest influence with the parents in making the environment suitable. Parents who are not living together happily may be taught by the socially minded physician how to bear and forbear with each other, in order that the child may not suffer; as there is no real substitute for family life or suitable alternative for paternal love and care. A nervous child will often coöperate wonderfully well with a physician who speaks with understanding authority which it does not experience in a home where it is allowed to be self-indulgent. Promotion of the health of children depends not only upon physical, but also mental and social conditions.

The public in general is rapidly becoming informed on the value of preventive measures, and to-day the physician interested in children is seeing a larger percentage of supposedly well children than ever before; that is, children are now more frequently brought to the physician's office for a thorough examination with the object of determining the state of their general health.

There does not seem to me to be any reason why specialists in diseases of children should have a monopoly of the well child, and it is only becoming so because so few general practitioners are interested in the child unless he is sick. Too frequently the story is told by the parents that when they take the child for examination to their family doctor, who, they say, is very good when the child is sick, he does not show enough interest in the child to make a thorough general examination. The parents state that after making a superficial survey he dismisses them with the remark that the child is all right, and does not require any medical supervision.

Progressive physicians realize that the future of medicine is in the prevention of disease and the promotion of health, and that all preventive work must be based on a thorough and complete physical and mental examination. For the man who desires to practice scientific medicine, there is no more interesting work than conducting a careful study to determine the state of a child's health. This includes a thorough search for various defects, which might in time, if unrecognized, interfere with health.

The determination of the physical fitness of a child requires not only a thorough physical examination, but in addition, certain anthropological and functional tests. Physicians must have a knowledge of the normal child, and can with great advantage interest themselves more fully in the signs of health. I am inclined to believe from some years' experience that students, both graduate and undergraduate, and medical men generally, adopt too low a standard for normality; their normal is frequently a subnormal. This, I suppose, is natural because of their constant contact with the sick. The child, who is not obviously pale or thin, is usually considered to be in fairly good physical condition, which is often not the case. Medical students, basing their opinion chiefly on an incomplete inspection, are misled, by observing rounded cheeks and a prominent abdomen, into saying that the child under consideration is well nourished; when on a more careful examination, inspection being supplemented by palpation, it is easy to recognize that there is underdevelopment of certain portions of the body and that most, if not all, of the muscles are below par either in size or strength. A decision rendered from examination of one or two groups of muscles is inadequate. A proper study must always include a very careful examination of the condition of the abdominal muscles, which are of such great importance to the child's present and future health. The diaphragm is another muscle the consideration of which is so frequently neglected, and yet there is hardly a more important muscle in the body, and one which, in an abnormal position, produces harmful effects, because of its inability to function properly.

At no other time of life are preventive measures as successful; at no other time do they have as wide application as in infancy and childhood. We have definite measures for the prevention of such diseases of infancy as scurvy, rickets and tetany. Dental disease is also very largely preventable. With the knowledge which physicians possess at the present time, many of the respiratory diseases and also most of the gastro-intestinal diseases can be prevented.

During the first year, the prevention of gastro-intestinal diseases is a most important measure, and to accomplish this during the early months of life requires adequate direction and supervision by a physician, with the retention of the infant on breast milk if possible. It is true that many young babies survive on artificial food; but simply because they do not succumb the diet is considered adequate, when in fact it is too frequently deficient in some essential factor. It is well to remember that poor feeding does not always show itself immediately. Many such infants, dying from bronchopneumonia, convulsions or gastro-intestinal disease contracted the fatal disease only because of rickets they acquired from improper feeding and hygiene.

Special attention must be given to the question of nutrition. Malnutrition in childhood can be prevented if parents are properly instructed as to the management of their children, the preparation and selection of food, the importance of regular hours for eating, proper food habits such as thorough mastication, sufficient time for each meal, the importance of cleanliness, adequate rest and the elimination of excessive exercise. Careful questioning must be made as to the amount of sleep, the amount of sunshine and fresh air, the character of the home life, whether the child is properly supervised in such matters as his social activities, his playmates, the kind of literature he is permitted to read, and in matters of personal hygiene, such as the care of his teeth. Malnutrition may also be due to focal infection as well as to mental or physical defects or malformations.

The teaching of the prevention of contagious disease is too often neglected. If the physician would give more time to explain how transmissible diseases are contracted by contact infection, he would be more successful in treating a child in its home without the other children in the family becoming infected. Furthermore, doctors in general could do a good deal to win the support, instead of the opposition, of the public to the efforts of the Health Department in maintaining quarantine regulations. If parents were compelled to bring their children to the family physician before admission to school, and if they were not admitted to school without a certificate stating that they are free from any evidence of transmissible disease, or from exposure thereto, much of the contagious disease which occurs early in the school season would be prevented.

It is the duty of the true physician to use every opportunity afforded at meetings of parents, or other groups interested in the care of children, to refer constantly to proper prophylactic measures as well as to measures for the promotion of health of the children of his community, such for instance as a properly supervised milk and water supply, pure food, the elimination of the fly and other disease carriers. He should emphasize the importance of the specific prevention of diseases such as smallpox, which I believe to be of great importance at the present time, and of diphtheria. Every child under six years of age should be immunized against diphtheria by means of toxin-antitoxin. It is hoped that the time will come when our State Department of Health will be able to supply toxin-antitoxin to all physicians free for those patients who cannot afford to buy it, just as at the present time the Department furnishes free diphtheria antitoxin. To-day it is considered criminally negligent for a physician to fail to give antitoxin to a child suffering with diphtheria, and the day is not far off when it will also be considered negligence on the part of the doctor who fails to advise the parents of children under his care of the importance of protecting their children from diphtheria by having them immunized with toxin-antitoxin.

Diphtheria is not the only transmissible disease to-day for which we have a specific prophylactic agent. Under this head can also be classed typhoid fever and probably pertussis.

Another condition which can be definitely prevented is enlargement of the thyroid gland. The percentage of enlarged thyroid glands has been found very high, based upon the examination of a large number of children in different parts of the country. It is estimated that there are 200,000 persons, mostly children, with simple goiter in Chicago. Visible enlargement can easily be recognized, especially if the child is asked to swallow. If, on palpation, the rings of the trachea cannot be felt through the gland, it may be definitely considered to be enlarged. The incidence of simple goiter gradually increases in children from five to thirteen years of age, and is much more common among girls when puberty is reached. Simple hypertrophy of the thyroid, being due to iodin deficiency, may be prevented by the administration of three grains of sodium iodid daily for ten days twice yearly.

Hay fever is a disease which is becoming increasingly frequent among the more intelligent class of children, who are especially susceptible to pollen sensitization. Recurrent attacks can be prevented in at least 25% of the cases by first determining the specific pollen to which the child is sensitized, and then establishing a tolerance.

The prevention of heart disease and rheumatic infection can be often accomplished if physicians give careful study to the condition of the tonsils and adenoids, and if these show any evidence of infection, to advise their prompt removal.

The prevention of deafness and the prevention of defective vision are both well within our control if the proper measures such as the prompt recognition and treatment of ear infection and routine eye examinations are conducted.

Family health as a whole is important if we are to raise healthy children, and this is particularly true in reference to expectant mothers. Pediatrists have taken a leading part in the development of maternal welfare. I am proud to say the Federal Maternity Bill became a law with their active support. They have realized that to have healthy babies one must have healthy mothers. Physicians interested in children should take the lead in the promotion of the health of the citizens of their own community, and not feel that this is someone else's responsibility. The most crying need in the further reduction of the too high infant mortality in this country lies in the reduction of the large number of deaths due to congenital causes. This can best be brought about by adequate prenatal care, which would reduce the number of premature and congenitally weak infants. Abnormalities would be recognized in time for their correction and congenital lues prevented. Hess has demonstrated that there is a diminution of calcium in the blood of pregnant women before delivery. A proper diet for the mother, therefore, must contain an adequate amount of calcium. This can be obtained from foods such as milk, eggs, whole grain flour, green leafy vegetables and fruit. Children of mothers taking this diet would later be more apt to erupt healthy teeth and be less susceptible to such diseases as rickets. Adequate prenatal care means the careful and continuous supervision by a properly trained physician.

It is an erroneous opinion held by a few uninformed physicians that the development of preventive medicine will affect their incomes unfavorably. Even if it did, most physicians would not let this hinder their active interest in its promotion. However, those physicians who oppose prophylactic medicine are mistaken, because the more educated the public becomes in the prevention of disease, the more need will there be for physicians' services and the larger will be the incomes of those physicians who are interested in examining well children. Physicians should encourage the formation of health clinics, often called health centers, for the examination of supposedly well children. In these clinics, children who are found to have abnormal conditions are not treated, but are referred back to their own family physicians, or to a hospital if they cannot afford to pay, and in this way health clinics really promote the practice of physicians. This is the answer to those who are narrow enough to look at it only from a commercial point of view.

The interest of the public in preventive medicine is clearly shown by the large demand all over the country for properly trained public health nurses and the great interest now taken by educators in health teaching. Health education is now a regular subject in most progressive schools. This increased knowledge on the part of the laity will ultimately compel doctors and nurses to be better qualified for child health work.

Every doctor should equip himself to be a health teacher, and while treating the sick, demonstrate the prevention of disease to the family, as at that time it will make the most lasting impression. Physicians should acquire the preventive point of view, and think more along the lines of child hygiene, the feeding of normal children and definite prophylactic treatment. It must be remembered that the supposedly well child may be a potentially sick child.

Hygiene must be the watchword of the physician. There is no more important function for a physician than the teaching of hygiene to the youth of his community, and through his influence the educating of them to higher ideals of health, not only physical, but mental and spiritual. The public is beginning to understand that the child in poor health with physical defects cannot do as well in school as the healthy child. The physician must teach a positive rather than a negative health—what to do instead of what not to do. One may appeal to a child through pleasure or on the basis of the development of good looks, that is, appeal to the child's emotion rather than to his reasoning powers. Appeal to the wishes of the child to be better and healthier than other children. Although health rules apply to everyone, they must be adapted by a physician to the individual's special requirements.

Parents must be taught the importance of bringing children to the physician for regular, complete and repeated examinations in order to determine their state of health.

The late Ambassador Page, in speaking of the forgotten child, said, "The most sacred thing in the commonwealth and to the commonwealth is the child, whether it is your child or the child of the dull-faced mother of the hovel. The child of the dull-faced mother may, as you know, be the most capable child in the state."

DISCUSSION

Dr. William N. Bradley (Philadelphia, Pa.): With more than the customary veracity on the part of discussors of papers, I must say that Dr. Carpenter has left little or nothing for me to say. I am sure, however, that his paper is an extremely timely one, and not only is appreciated by every member present, but every one of us will go back with new thoughts and new purposes to do our work better and accomplish more in the prevention of childhood illnesses.

If I might briefly emphasize some of the points which have impressed me I should include routine examinations at definite intervals; special study of the nutrition of each individual case to determine the factors which are responsible—these points having been elaborated upon by Dr. Carpenter—and the importance of diphtheria immunization. It was in this section three years ago that this matter was very thoroughly considered. We hoped that might be the beginning of widespread propaganda and its adoption throughout the state; but like many good things it has dragged along, gradually gaining in a knowledge of its importance. I, personally, believe that the time is now ripe for making diphtheria immunization compulsory in the state of Pennsylvania.

Two other points have very much impressed me in Dr. Carpenter's paper: the first being the psychology of the child. I believe this to be of such importance that it could very well consume the entire time of one in making it a thorough study. In this connection I should like to emphasize what Dr. Carpenter has said concerning pre-school examinations. It is during this period that many defects which manifest their influence on later life can be detected and in most instances corrected. It is during this period that semiannual examinations are of value so that the physician can determine whether or not previous recommendations have been carried out and whether any other measures are necessitated. This procedure becomes extremely valuable in the prevention of loss of school hours after the child has begun attending school. In addition to the correction of physical defects it is important to include, as already pointed out, vaccination against smallpox and immunization against diphtheria. Of equal importance before the child enters school is the mental test. This, if not already discovered, will determine the mental age of the child. This, in turn, will determine what grade of the school curriculum the child is best fitted for, and, if serious mental defect exists, aid in the selection of a proper training school. It is just as important for any physician who attempts to advise as to the care of children to be familiar with and carry out the suggestions which have been made as for those who devote their entire time to the study of child life.

I wish to present some of the record forms which are in use at the Starr Center, Philadelphia, and also some of the records and pamphlets which are used by the Child Federation, Philadelphia, in their attempt to cover this subject which has been so clearly outlined by Dr. Carpenter.

Dr. Edward A. Strecker (Philadelphia, Pa.): I think the point that Dr. Bradley makes is a very important one. So many people, especially parents of children, expect that the mental measurement is a measure of goodness or badness, and also they expect that there is a way of doing something about it. If the test is anything at all, and I think within rather stringent limitations it is something, it is a measure purely of intelligence. It probably does measure intelligence, but certainly nothing else; and if it does measure intelligence the only reason it does so is because it has been standardized now on many thousands of children. Probably it tells about the average child; but, as Dr. Bradley pointed out, it does not measure the unusual child.

I have some illustrative cases in mind; for instance, a child I saw not so very long ago that was not getting on at all in a very good private school. He was below the grade constantly, and was thought to be very dull and very retarded, and possibly even feebleminded. His Binet measurement gave him an age of about 15. He was 9. He had an intelligence quotient of 137. So, as Dr. Bradley pointed out, you must not expect too much of these tests. At most they measure the intelligence of the child. I do not think they do this on account of the intrinsic nature of the test, but because these tests have been repeated so many thousands of times on all kinds of children that they necessarily have become to some extent standardized, and what has happened so many thousands of times will happen again.

So, with these limitations, I think perhaps intelligence tests are useful; but Dr. Bradley knows and I know that certain psychologists are very apt to over-rate their value. Perhaps they were to some extent overrated and used too much in the army. The ordinary standardized Binet test is probably of more service.

Dr. Frederic H. Leavitt (Philadelphia, Pa.): It is roughly estimated that 52% of all the free hospital beds in the state of Pennsylvania are for the treatment of the mentally diseased, either the deficient or the psychotic. Much can be done in the line of prevention of mental diseases by attention to the physical health of infants and young children. This was forcibly illustrated by a case which Dr. Gittings referred to me the other day. A child, now an imbecile, became so because of an attack of pertussis which it recently had. If, along the line of Dr. Carpenter's work, that mother could have been instructed as to the dangers of such conditions, that child would not now have become a state charge.

A "Society for Mental Hygiene," which is a misnomer and a bad name—a better name would be "A Society for the Prevention of Mental Diseases"—, is now endeavoring to bring before the public and the family doctor and pediatrician, means whereby the public at large can be instructed in the rational prevention of mental disease. This society is in its beginnings in this state. In some other states, notably Massachusetts, it is quite well developed. Dr. Daniel McCarthy of Philadelphia is one of the prime movers in this endeavor and I think this winter and in the years to come, you will hear more of this society through the medium of Dr. McCarthy.

Dr. J. Claxton Gittings (Philadelphia, Pa.): The whole question of prevention is so logical that it is almost unbelievable that it has taken so long to get the lesson over both to the profession and the populace at large. From the professional standpoint there seem to be two objections. One Dr. Carpenter touched on, and he has shown very clearly that the attempt to keep the child well would be just as lucrative and infinitely more satisfactory than trying to cure diseases. The other question I think the profession has asked itself is, "Can they do what they claim they can do?" The number of instances where a disease can be prevented is becoming larger and larger; there is no question about it.

From the standpoint of the laity, the thing we have to combat is inertia. When it comes to the future the average individual is very apt to be too indifferent to care about what may happen several years hence; but a few instances brought to their attention, such as the one Dr. Leavitt just spoke of, would certainly change that attitude.

HEMORRHAGIC NEPHRITIS[*][†]

JAMES P. O'HARE, M.D., AND
WM. G. WALKER, M.D.
BOSTON, MASS.

We have chosen this subject of hemorrhagic nephritis for discussion at this meeting because it is a form of hematuria to which but little attention is given and because it is a type of nephritis which is but little known and little mentioned in the literature. By hemorrhagic nephritis is meant a type of case in which microscopic bleeding continues for a varying length of time during and in the wake of an acute nephritis. It may be acute, subacute or chronic. The duration of the disease is sometimes a matter of a few weeks only or the disorder may last for months or even years.

In the recent literature, especially the English, there is a marked paucity of reference to this condition. Where it is mentioned at all it is usually brief and casual or a case report. The various systems dismiss it very briefly. Osler and McCrae[1] speak of the persistent hematuria in unfavorable cases of acute nephritis. McElroy[2] just mentions a hemorrhagic form of chronic glomerulo-nephritis. Christian[3] speaks of the bleeding that may persist for months in acute nephritis. He cites an illustrative case that healed after such a persistent hematuria. Hill[4] discusses the condition, as a disease entity in children, more completely than other authors. He found that acute hemorrhagic nephritis was the commonest form of nephritis in children and that it made up about 25 per cent of all of the nephritis coming into the Children's Hospital in Boston. Shuman[5] mentions a case that occurred after mastoiditis. Lichtwitz[6] refers briefly to the prolonged microscopic bleeding of certain cases of diffuse glomerulo-nephritis. Siebech[7] states that in war nephritis, the excretion of red cells often persists for a long time "as the only sign of that illness." Because of the scarcity of the references in the literature and because of their sketchy character it seemed desirable to bring before you this subject of hemorrhagic nephritis.

A good example of this condition is that of a young man of twenty-three who had an attack of acute nephritis two years previously. The outstanding feature of his disease at that time was hematuria. He was discharged from the hospital "only slightly improved" at the end of three months. For two years his condition remained about the same, with weakness and listlessness as the chief symptom and hematuria as the chief sign. At this stage, in 1921, he came to our clinic. From that time to the present we have had the patient under close observation. The one outstanding feature of his case is the persistent bleeding, in spite of every conceivable form of treatment, for four years. The amount of bleeding has varied from a few red blood cells per high powered field to macroscopically bloody urine. There is practically nothing to be seen in the sediment except red cells with occasionally a red blood cell cast and usually a rare hyalin cast. These casts are found only after a very diligent search. As a matter of fact the urine sediment of this patient has been dominated so completely by red cells that the patient has had cystoscopy, ureteral catheterization, and x-ray of both kidneys to rule out bleeding from any surgical condition. There was nothing in the nature of a general hemorrhagic tendency in this lad. The platelets in the blood were normal and there was no calcium lack.

Clinically this patient is not remarkable. His only symptom is occasional tire. Of late there is a slight secondary anemia. The blood pressure is at times slightly above normal and the renal function is moderately impaired. This patient has passed from the acute stage to the chronic with impaired function and increased blood pressure. The process must indeed be very slow to take four years to get to its present stage. It is not always so slow, however.

Hemorrhagic nephritis is far from an uncommon condition. In a series of eighty-six consecutive cases of acute nephritis admitted to the Brigham Hospital this diagnosis was possible in eighteen or twenty-one per cent. If we add the subacute and chronic cases the numbers will be considerably increased. There are at least nine chronic cases in our series. We are certain that in private practice it is even more common.

The diagnosis is not at all difficult. In the acute stage the urine may show an abnormally large number of red cells or a continuation of the red cells while the other elements are disappearing. It is in the next stage that the disease is most interesting from the point of view of diagnosis. In this stage the persistent finding of a sediment consisting exclusively of a varying number of red blood cells together with a rare nongranular red blood cell cast or a rare hyalin cast is sufficient. In some cases in which there is a continuously active and diffuse condition in the kidneys there may be a varying number of brown granular casts as well. The reason the diagnosis is not made more often is that in the subacute and chronic stages it is so easily overlooked. This is due to the paucity of signs and symptoms and, I am sorry to say, to the neglect of microscopic examination. It is certainly the path of least resistance to discharge prematurely the acute nephritic who has been kept in bed for many weeks. The patient or the family may be getting restless. Urinalysis may show only the slightest possible trace of albumin. (You know how easy it is to miss such an amount!) How easy it is to neglect microscopic analysis at this stage! If it is made at all, it is usually the report of a laboratory, which reads, "a rare hyalin cast and a rare red cell." The temptation is great to say, "That is nothing. Those will disappear. He will be all right." And yet it is not "all right." A few days later one might find numerous red cells and the process might go on to a very serious condition without indicating it by any symptoms. Perseverance in the rest treatment may cause a cessation of the lesion in the kidney and a consequent cure. Ignorance or neglect at this stage may lead to an incurable state and death.

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[*] Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 2, 1923.

[†] From the Medical Clinic of the Peter Bent Brigham Hospital. This article is No. V in a series of studies in metabolism from the Harvard Medical School and allied hospitals. The expenses of this investigation have been defrayed in part by a grant from the Proctor Fund of the Harvard Medical School for the Study of Chronic Diseases.

From the point of view of differential diagnosis the disease is of greatest interest in the subacute or early chronic stage. It is a very common thing for the internist to have referred to him patients in whom an unexpected slight albuminuria has been found. The sediment shows a moderate number of red blood cells and practically nothing else. The history does not disclose any outstanding probable cause, like stone, cancer, etc. Repeated observations disclose the fact that the hematuria is persistent. The question usually arises, "Are we dealing with a small 'silent' stone, papilloma, early tuberculosis, etc., or is this a case of hemorrhagic nephritis?" The answer to this question is extremely important and extremely easy, if the process is a nephritis. It is important to the patient because such a diagnosis will avoid for him uncomfortable diagnostic procedures like cystoscopy, ureteral catheterization, etc. It is easy, too, depending merely on the finding of a few casts. The finding of a urinary sediment consisting almost exclusively of red blood cells together with a rare blood cell cast or even a rare hyalin cast is sufficient to establish the diagnosis of hemorrhagic nephritis and rule out stone, tuberculosis, papilloma, etc. The blood casts certainly indicate the source of the hemorrhage. It cannot be too much stressed that the casts are rare, and it is upon these rare casts that the diagnosis depends.

Apart from these differential points this type of case differs but little from the ordinary case of acute or chronic nephritis. In its etiology this is very evident. Of our eighteen acute cases nine had "sore throat" as the cause. Two were due to "colds," two to scarlet fever, one each to the following: otitis media, parotitis, pneumonia, septic miscarriage and anesthesia. With such causes the streptococcus is probably the responsible agent most often. This would seem to fit in with the findings of Ophüls who demonstrated this organism in the tissue of a similar type of glomerular lesion.

Clinically, too, these cases differ but little from the ordinary nephritic. To be sure edema is not very characteristic even in the acute stage. In one third of our cases it was not obviously present, and in only one was it more than moderate in amount. Usually, it subsides promptly. The blood pressure in eleven of our eighteen acute cases was at all times normal. In one third the systolic pressure was found around 160 mm. for a short time. In only one did it reach 194 in the active stage. The diastolic as a rule was but little affected except in the long-standing cases. In the chronic condition we have seen the systolic as high as 232 mm. and the diastolic 120 mm.

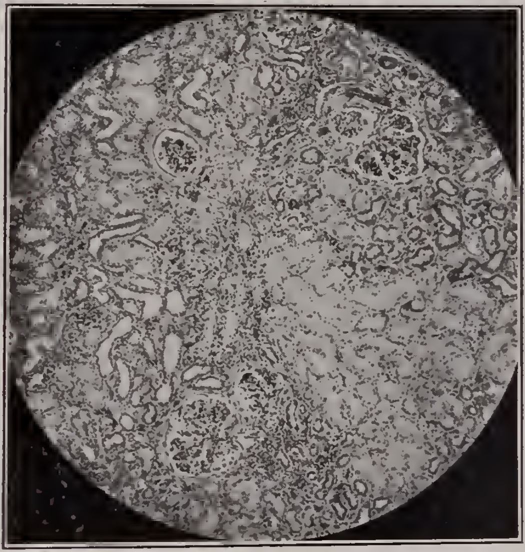
There was nothing at all in the volume of urine, its specific gravity or albumin content that differed in any way from that found in any acute or chronic nephritis.

Functional changes, too, are similar to those noted in other types of nephritis. Our acute cases usually displayed slight if any deviations from the normal. Occasionally one finds in a severe acute case marked changes in the tests of function. Such, however, are rare. In one fatal case the blood urea nitrogen was over 200 mgm. This was more than likely an acute exacerbation of a chronic process. In two the maximum level was over 50 mgms., in four between 30 and 40; in four between 20 and 30, and in the others it was less than 20 mgms. Only two cases showed a minimum phthalein excretion between ten and twenty per cent, one was between 20 and 30 per cent; seven between 30 and 40 per cent, and six above 40 per cent. Out of seven cases in which the "two-hour renal test" was done the results were practically normal in four. There were only slight changes in the night volume or slightly lowered specific gravity or a low output of salt in the other three. The blood salt was occasionally above normal in the acute cases and at times a slight acidosis was noted. In the late chronic stage more marked functional changes may take place.

At first sight it seems rather remarkable that with such persistent bleeding anemia is not a characteristic finding. It is so slight however that the bone marrow easily makes up the loss. Anemia does occur in some severe or long-standing cases, but when it does it is usually a mild one of secondary type. There is nothing in the platelet count or in the calcium content of the blood—where we have been able to test it—that accounts for the bleeding.

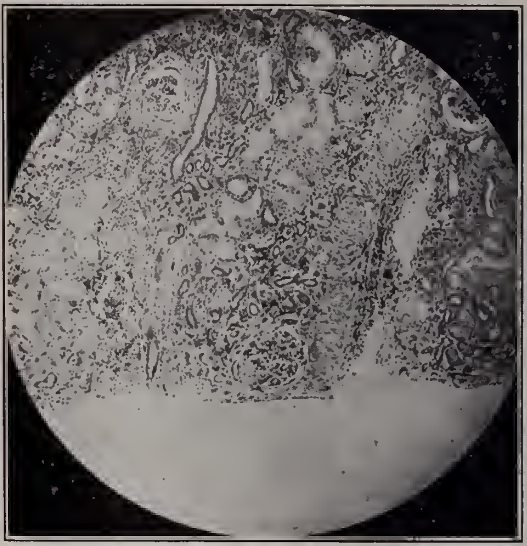
The course of the disease may be divided into three stages. The first acute stage usually lasts a few weeks and then gives way to the second stage characterized by continuous bleeding without increased pressure or changes in function. This stage may last for a year, at the end of which the patient may completely recover. The third chronic stage is a persistence of the second with permanent functional damage and high pressure. It is usually slowly progressive to death in uremia. It may last for years.

Not all of the cases of acute hemorrhagic nephritis go to a chronic stage and death. In fact, most of them get better or are left merely with a slightest possible trace of albumin and a rare cast in the urine. It is possible that these are responsible for some of our acute exacerbations of chronic nephritis. Very few of our cases have died. Such as have were either severe cases or a chronic nephritic developing slowly by the continuous destruction of one glomerulotubular system after another. One such case we have followed through all stages from subacute, with normal blood pressure and function, to chronic, with hypertension, poor renal function and death in uremia.



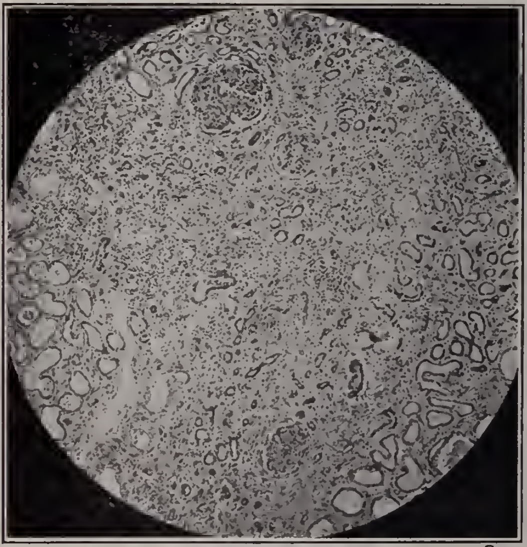
Slide I

Except for the rest treatment of this condition there is but little to say about treatment. It is essentially the same as that of any similar nephritis. It has for its object rest for the kidney. The principles of dietetic therapy and absence of renal irritation should be carried out as usual. There is just one word of caution. These patients should not be underfed or too little protein given because of the mistaken notion that this substance should be kept low until bleeding disappears. We are in the habit of giving the average patient about 60 G. of protein, 2 G. to 4 G. of salt, 1,200 c.c. to 1,500 c.c. of fluids after the first stage is passed, unless the tests of function, etc., indicate the need of making special change.



Slide II

Rest in bed is the most important part of the treatment. This should be adhered to rigidly, if necessary, for five to six months. The only chance a patient has to stop the process at all early is by continuous bed treatment until bleeding entirely ceases. The patient should be allowed out of bed very gradually. If the hematuria returns he should be put back to bed. It is very difficult to handle some of the long drawn-



Slide III

out cases. After a patient has been in bed three to four months without symptoms, it is almost impossible to keep him there any longer. And yet it has been our experience that just as soon as these patients get up the blood in the urine increases. In those cases that will not stay in bed, as much rest as possible must be imposed. Eventually the hemorrhage ceases in most cases.

Methods aimed at stopping the bleeding directly have all failed. Ergot, calcium, transfusion, vaccines, tonsillectomy and decapsulation of the kidney have all been without avail.

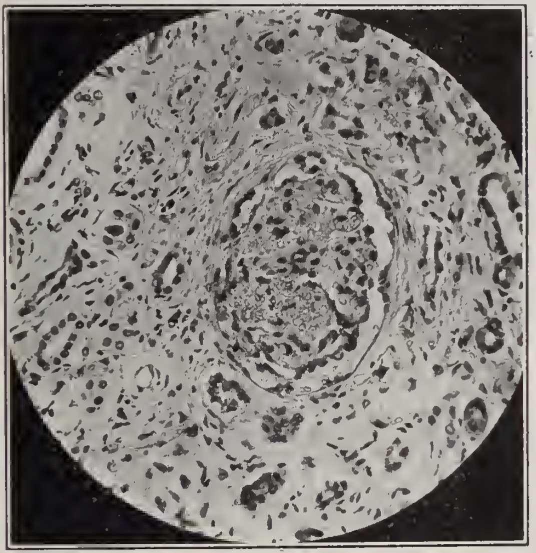
A few words about the pathology is in order. We have been most fortunate in obtaining specimens for study in two of our cases. One was from an autopsy on a patient who had died from a chronic hemorrhagic nephritis. The other was a specimen obtained during life in the following way: Some of the foreign writers had recommended decapsulation as a method of stopping the bleeding in these cases. When we had exhausted every means in our power to stop the hematuria in the patient whose story we gave early in this paper, we tried decapsulation as a last resort. At operation a small piece of tissue was excised from each kidney. This we had done repeatedly in experiments on dogs. From such tissue we were able to make a somewhat unique bacteriological and pathological study *"in vivo,"* as it were. Unfortunately, there are few indications for decapsulation of the kidney, but whenever it is indicated the opportunity to make a similar study should be grasped.

Incidentally cultural studies of this tissue disclosed no living organisms. Preparations stained for bacteria have not yet been completely studied. The pathology of this condition is essentially that of a subacute and chronic glomerular nephritis with "bands of anastomosing cicatrices enclosing sclerosed glomeruli and atrophic tubules." The glomeruli show all stages of destruction up to complete obliteration. In many there is a marked proliferation of connective tissue around the capsule. In many there is a proliferation of capsular epithelium with "heaping up" and adhesions to the tuft. The latter commonly consists of a "lobulated hyalin, connective tissue mass" with the blood confined to a small portion at the periphery. Occasionally, as in Slide *IV*, the blood cells seem to be in the form of a lake, in the center of a lobule. Occasionally one sees a lobule represented solely by a pink hyalin mass containing the remains of a few nuclei. Thromboses of small vessels leading to glomeruli are not very uncommon. The vessels through the kidneys show varying degrees of sclerosis, although many are normal. As a rule the tubules show atrophy but no active degeneration. This undoubtedly accounts for the fact that casts are not brown granular. Where there is an active tubular degeneration we should expect to find these granular casts. The scarcity of casts in the urine sediments is a bit difficult to explain unless we assume the slowness of the process and the few glomeruli affected at any one time as responsible.

A few lantern slides will illustrate some of these pathological findings.

Slide I is a low-powered view from our "decapsulation" case. There is some slight atrophy and dilatation of the tubules. The glomeruli show varying degrees of infiltration of the capillary tufts and connective tissue infiltration around the capsules.

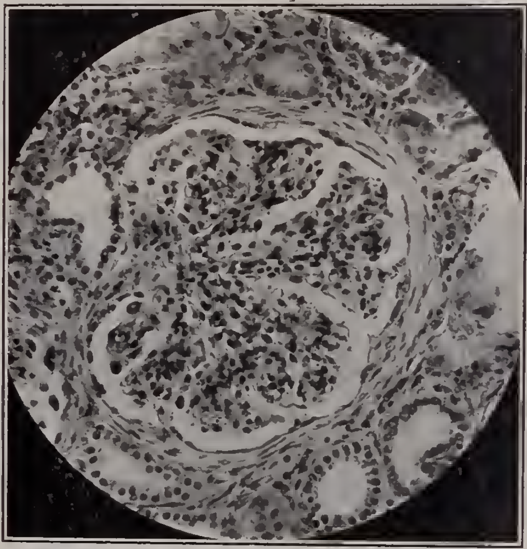
Slide II is a similar view from the same case. It shows in the upper right an atrophic glomerulus with connective tissue infiltration around the capsule and toward the middle of the left-hand edge a glomerulus in which the upper left lobulation is largely replaced by a pinkish hyalin mass.



Slide IV

Slide III is a low-powered view of the more chronic case, which came to autopsy. Here is seen a band of scar tissue "surrounding" islands of atrophic dilated tubules at the top and bottom of the slide. This band contains glomeruli in various stages of degeneration. Note particularly the almost completely sclerosed one just above and to the left of the center.

Slide IV is a high-powered view of a glomerulus. This shows, in addition to the connective tissue thickening around the capsule, a tendency toward "heaping up" of capsular epithelium in spots with adhesions to the capsule. There are red cells in the capsule, which may or may not be an artefact. The most interesting feature is the somewhat indefinite lake of blood in the right-hand half. This is similar to, though less clear cut than a lesion we have found in rabbits. In these there have been sharply defined lakes of blood with hyalinized capillary walls around the lake. Rupture of hyalinized capillary walls with hemorrhage and destruction of the center of the lobule is the obvious explanation. Hematuria from such a source, or indeed from any ruptured or torn capillary, is easy to understand.



Slide V

Slide V is a very pretty picture of a subacute glomerular lesion with marked connective tissue growth around the capsule and pronounced cellular infiltration of the tuft.

SUMMARY

Hemorrhagic nephritis is a disease entity occurring during the course of an acute nephritis. It may be acute, subacute, or may even progress to a chronic nephritis with hypertension and death in uremia. The chief diagnostic feature is the finding of a sediment consisting almost entirely of red blood cells with a rare hyalin or red blood cell cast. The finding of these casts is sufficient to differentiate the disorder from anything else with which it might be confused. The prognosis for life is usually good but most of the patients are left with some residue of their nephritis. Treatment is not very satisfactory but prolonged rest is the one form that is most essential. The lesion is essentially a subacute or chronic glomerulo-nephritis.

This disease is an extremely common clinical condition that is very frequently missed on account of the paucity of signs and symptoms. Because of its great importance in the production of a progressive disorder leading to death it is absolutely imperative for us to recognize its existence and to stop discharging our cases of acute nephritis without repeated, careful microscopic examinations with hemorrhagic nephritis ever in mind.

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DISCUSSION

Dr. Howard G. Schleiter (Pittsburgh, Pa.): I am sure that we all feel very appreciative to Dr. O'Hare, not only for coming here and reading this very interesting paper but also for helping us to focus our attention on a factor of diagnosis in renal lesions which might be a source of error. The minute hemorrhage from the kidneys after an attack of acute nephritis is familiar to all of us, but in my own experience, at least, is accompanied by more albumin, casts, and the concomitant signs of a diffuse nephritis. In several such cases that I recall which had been watched for over six months, and in which the red blood cells had persisted in large numbers, there was very definite relief, after all other measures had proved of little avail, from decapsulation; and in one such case, the red blood cells disappeared almost immediately.

As to the types of cases described by Dr. O'Hare, in which there is microscopic bleeding with a diagnosis made by the presence of a rare cast, I have looked through our hospital records and I must say that our number is far below what he has described. That this may be due to lack of attention or lack of experience on the part of the men who make the examinations (usually the interns) is a possibility. On the other hand, these examinations are made quite frequently and in cases where abnormalities have been found in the urine it is customary to make a microscopic examination of the urine three times a week at least and the findings are carefully recorded. Therefore, I do not believe the internes have been totally in error, and am forced to conclude that we have a smaller number of such cases than Dr. O'Hare reports. For some reason such cases seem to occur more frequently in private practice than in hospital wards.

I do not quite see that the finding of a rare hyalin cast in the urine without blood findings, functional kidney disturbance and other concomitant clinical signs is quite sufficient to make a diagnosis of nephritis. It would seem to me that there is a possibility that where a very rare hyalin cast is found in conjunction with red blood cells, we are not dealing primarily with a nephritis, but with a hemorrhagic condition in one or both kidneys. In such a case a separate examination of urine from the two kidneys would seem indicated.

Dr. W. Egbert Robertson (Philadelphia, Pa.): I was very much gratified that Dr. O'Hare said the disease was very common, because it enables me to say with better grace that I believe I have seen quite a number of these cases. I have one at present that I have been watching for a number of months in whom the only subjective symptom was tire, and the objective symptoms were those described by Dr. O'Hare. The cases I have seen, however, I think have all had sufficient anemia to make it a general phenomenon and a clinically appreciable finding. I feel that the amount of anemia, although rarely below 60 per cent of reds, is sufficient to attract attention. In this particular case I speak of now, the man has had an average count of 3,500,000 reds. At no time has he had any leukocytosis. His blood picture has been striking by its lack of nephritic findings. The blood pressure has been uniformly low.

Perhaps the two things, therefore, which as I have seen it, characterize the disease, are the subjective signs of tire, which is as marked, I think, as it is in any well developed and early case of tuberculosis. At least so it has seemed to me in the cases I have seen.

The phthalein output in these cases is often high. In one I have under observation at present the phthalein output some months ago was 85 per cent, and taken within the past few days it was 85.5 per cent, based upon a three-hour reading. We always take three-hourly readings, the first an hour and a quarter, and the next two one hour apart. The total of this reading amounted to that much. After discussing with Dr. Sherrill his paper with Dr. Allen, we placed this man on a salt-free diet, but despite the extremely low salt intake we were absolutely unable to influence the disease at all.

The other points of interest, I think, are the low blood pressure and the absence of cardiac hypertrophy until very late in the course of the disease. Whether this syndrome merits the special place Dr. O'Hare seems inclined to give it is a question which time and further study must determine. Intermittent and relatively slight hematuria is so common in certain forms of so-called nephritis, that at present hematuria seems an unsafe symptom on which to erect a group.

Dr. A. I. Rubenstone (Philadelphia, Pa.): Of great importance, I think, is the emphasis laid by the essayists on cases of hemorrhagic nephritis, especially of the early type. The early recognition of nephritis, before much kidney structure and function is abolished, is the important note in the prevention of serious consequences later. Two interesting cases came under my observation recently; one was a boy of eight and the other a girl of fifteen. Both were of the type, pointed out by Dr. O'Hare, of slow-bleeding nephritis that goes unnoticed. In these cases the urinary findings were very low in the morning specimens; so much so that a cast was rarely found in the morning urine but the evening specimen, after a day's food and activity, disclosed red blood cells and casts more or less frequently.

The point I wish to bring out is the importance of examining evening specimens of urine, which is not done in routine hospital practice. In the very early cases of this type of nephritis, the only abnormality in the blood chemistry may be a retention of uric acid which, of course, is the first nonprotein nitrogen to be withheld; so that I would emphasize the examination for uric acid concentration in suspected cases.

In one case, although temperature was about normal, a streptococcus viridans was recovered from the blood as well as a streptococcus from the urine. In the second case, a culture of the tonsillar fossæ gave a profuse growth of streptococci, and this after tonsillectomy two years previously. I am interested to know the bacteriological findings of Dr. O'Hare in these cases.

Dr. Ernest W. Willetts (Pittsburgh, Pa.): It strikes me as being very interesting in these days when so much is said about the danger of making a clinical diagnosis on laboratory tests, to have this condition described as being diagnosed on the finding of hematuria with the finding of a very rare cast now and then. If I am not mistaken, I believe that Dr. O'Hare did not mean to give us that impression entirely, and for this reason I am on the floor.

I wish to ask Dr. O'Hare if the history is not just as important as the cast and also as important as the hematuria. While the diagnosis depends largely on laboratory findings, there is a great deal more to it than just that. If I am not mistaken, the Doctor said there was a history of acute infection to start with. Otherwise, we are diagnosing nephritis without the symptoms as we usually know them and I feel that a word of warning is in place. I should like to have Dr. O'Hare speak on this phase of the matter if I am mistaken in what he has said.

Dr. O'Hare (in closing): With regard to Dr. Schleiter's remarks, I wish to say that one of the reasons why there is so little in the literature on the subject is that those who write the literature rarely look at sediments. They leave that to someone else and the reason it is not found more often is that the doctors who make the ward walks get the findings from the internes or others who make the examinations and do not understand the significance of them. If you just read in the history "a rare hyalin cast," "a rare red blood cell," it does not mean much, but if you look at it yourself and find it a persistent thing it means a good deal more than the report from the interne noted on the history sheet.

With regard to Dr. Robertson's remarks about anemia, it has been our experience that anemia has not been very great at any time except in the chronic phase, where it is similar to that in any chronic nephritis.

Dr. Rubenstone brought out the point about blood culture. We have done this but have been constantly disappointed, and the same is true of urine cultures. I think we should be more apt to find bacteria in the urine cultures if we dared repeat them. I doubt if it is wise to subject these patients to repeated catheterization with the thought of eventually finding bacteria. We know that they do come through the kidney into the urine. We have found cases such as Dr. Rubenstone mentioned but have been unwilling to subject patients to repeated catheterization. We have removed the tonsils and cultured them and have usually found the streptococcus viridans. Whether that means anything we do not know. In desperation, we have made vaccines from such cultures and have inoculated our patients with these vaccines, without any results whatsoever.

With regard to Dr. Willetts' remarks about the history and its importance, I do think the history is just as important in any nephritis as any other part of the examination, certainly as important as any physical finding or any laboratory finding. But, mark you, in most of the cases that you find coming in with microscopic bleeding there is no history at all. They are cases that have been found in the course of an insurance examination or some other examination and as we look back to find out what caused the process we are unable to find any actual illness which started this process.

With regard to symptomatology, most cases of nephritis show no symptoms, whether they are acute or chronic. Symptoms in nephritis are very rare. One symptom is common in almost any disease—tire. In every acute case it is obvious that it goes hand in hand with other symptoms and in the subacute case, which is the one we are most interested in, there are no symptoms except the listlessness, tire and so forth.

With regard to the infrequency of the casts and the hematuria: it is incorrect to say that a rare cast is enough to make a diagnosis of nephritis, particularly without hemorrhage. I do not intend to convey any such impression as being a general rule. We can have external hematuria with cylindruria in the elderly patient without any question, but hemorrhagic nephritis is a disease of the young and in the young we are not apt to find casts that would trouble us much in differential diagnosis.

With regard to the question of lesions from one side or the other, I have not much to say. Usually such bleeding is due to a tuberculosis or stone and the other things in the history usually indicate the line of work one must undertake to establish the diagnosis.

THE INTERPRETATION OF THE PATHOGENESIS OF LOBAR PNEUMONIA IN THE LIGHT OF EXPERIMENTAL STUDIES*†

H. H. PERMAR, M.D.

PITTSBURGH, PA.

The views on the pathogenesis of pneumonia presented in this paper are based on the results obtained in the study of experimentally produced pneumonia in animals and on the histopathologic changes found in a large series of human pneumonias which have been observed during the last ten years.

Among the earlier important studies on this subject is that of Ribbert (1894), who concluded, after a careful study of the pathologic findings in human pneumonia, that the infection gained access to the lung parenchyma by way of the air passages. With the demonstration of the pneumococcus in the blood stream early in the course of a pneumonia, the idea gained acceptance that the organisms were primarily disseminated in the lung by the circulation. It is difficult to see why certain lobes should be picked out for primary infection by the blood stream, and this theory has been pretty generally discarded at the present time. The bronchiogenic theory of Ribbert was generally accepted, up to 1920. The work of Wadsworth in 1904 pointed to this, and the researches of the Rockefeller group and others, about 1912-13, all indicated that primary invasion was by way of the bronchial tree. It has been shown by Cole that in over 50 per cent of instances some definite acute upper respiratory tract inflammation preceded the development of pneumonia.

The extensive and detailed studies of experimental pneumonia begun by Blake and Cecil during the war and reported by them from the Rockefeller Institute in 1920 were not in agreement with either of the two existing conceptions of the pathogenesis of pneumonia. They introduced a third possibility, namely, a lymphatic dissemination of the infective agent, which they believed originated at some point in the lower trachea or perhaps in one or more of the main bronchi, extending from there to involve the corresponding lobes. This process, which was primarily an interstitial inflammation, extended along the lymphatics to the walls of the ultimate air spaces, and the actual infection of the air spaces occurred when the pneumococci were washed into them along with fluid exudate from the inflamed interalveolar septa. According to their view, it was after the alveoli were filled with a serous exudate containing organisms that the familiar exudative stages followed in the classical way.

To one trained to think of pneumonia as a bronchiogenic infection of the lung this work was somewhat revolutionary. At the same time, since it very aptly answered the old question as to the reason for the lobar distribution, it had a great appeal. In fact, the present work was undertaken rather with the idea of studying further the exact mode of primary invasion of the lymphatics than for any other purpose.

In planning our work, then, the basic idea was to study the early stages of the changes developing after the instillation into the trachea of a small quantity of fluid containing pneumococci. The early stages were of particular interest since Blake and Cecil had only two experiments which were of less than 24 hours' duration; and especially since, in one of these the dose was infinitely greater than that commonly used by them.

The technical side of our experiments may be summarized as follows: Healthy rabbits were anesthetized, given an intratracheal injection of 1. c.c. of an 18-24 hour broth culture of pneumococci and killed after time intervals ranging from one-half hour to 72 hours. Two groups of experiments were performed. The second was a larger group and served to complete the range between 10 and 24 hours. Autopsies were done immediately and the lungs were thoroughly fixed in Zenker's fluid for microscopic study.

The results of the experimental work clearly indicated two major facts regarding pathogenesis: first, that the bronchiogenic theory of primary dissemination must be accepted, at least for the animals studied in these experiments; second, that the interstitial spread of the infection is invariably found at a certain stage in the development of the disease, after which it contributes to the lobar consolidation and tends toward the development of certain complications of pneumonia.

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*Read before the Section of Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 2, 1923.

†From the Pathological Laboratories, University of Pittsburgh.

The lungs examined at periods less than two hours showed nothing distinctive. After four to six hours there were found tracheitis, bronchitis, bronchiolitis, and early bronchopneumonia. Since the injection of one cubic centimeter of fluid into the rabbit's trachea results in a fairly wide distribution in the lung, these reactions, whether in large air passages or in the terminal bronchioles and air spaces, were all of the same age. The intensity of the reaction, however, was much more marked in the finest air passages and the air spaces because the tissues here are more readily injured. The walls of the trachea and bronchi in these animals were examined particularly for a primary lymphangitis, but in neither the superficial nor deep lymphatics was there any evidence that the infection was extending into the lung by these routes. On the other hand, it was found that in the animals killed after ten hours or more, there was an acute lymphangitis which originated in the terminal lymphatics draining the areas of bronchopneumonia. In other words, the lymphatic involvement took place only after the acute inflammation had become established in the lung parenchyma. It was a process, as one would expect, of lymphatic drainage from an infected focus, a flowing with the lymph stream, not a primary progression into the lung against the lymph flow, as Blake and Cecil had described it.

Once the acute lymphangitis had developed, further complications appeared. One of the first was acute lymphadenitis in the nodes at the hilus. Another was the extension by lymphatics to other parts of the involved lobe, or even to a new lobe. This occurred as a result of a degree of stasis in the inflamed lymphatic channels. The extension to the peripheral portion of the lobe was the result of this mechanism, since in the outer third of the lobe the lymphatics drain peripherally. As a result of this, too, acute pleurisy developed; also mediastinitis and pericarditis. These reactions were all observed as early as ten to twelve hours after the introduction of the organisms into the trachea, and like the pneumonic exudate, became more intense as the time interval increased.

At the same time that the interstitial inflammation was first noted, that is, after an interval of about ten hours, the cultures from the heart's blood were found positive for pneumococci. They were carried to the blood possibly by the thoracic duct or possibly they invaded the blood directly. Thrombosis of the capillaries and smaller vessels was less marked than in the larger trunks. It appeared that the acute inflammation in the perivascular lymphatics sometimes resulted in acute arteritis or phlebitis with septic thrombosis, since the oldest lesion in the vessel wall at the site of the thrombus was found in the adventitia.

The end result of the injection of pneumococci was the development of a fairly typical lobar consolidation of the lung, in which both bronchiogenic and interstitial inflammation were combined. And the acute pneumonia was accompanied by the additional lesions commonly seen in the human, such as acute lymphadenitis, acute inflammation of serous cavities and septic thrombosis.

Spontaneous acute pneumonia in the human may be developed by a similar mechanism. Instead of artificially introduced fluid containing bacteria, the watery exudate of an acute pneumococcic tracheitis or bronchitis may be the medium in which the organisms originally invade the finer branches of the bronchial tree, eventually reaching the air spaces. The lobe or lobes to be involved are determined by the location of the exudate. This is the less certain part of the analogy. The subsequent spread in the air spaces, the development of acute inflammation of the lymphatics with its sequelæ, such as lymphadenitis, septicemia, infective thrombosis and inflammation of serous cavities, all have their counterparts in spontaneous human pneumonias. A histological study of classical lobar pneumonia and particularly of influenzal pneumonia, reveals the invariable presence of interstitial inflammation, while in the patchy bronchopneumonias of infantile and terminal types, this is less well marked or absent. Observations of this nature suggest strongly the presence of interstitial inflammation as an early secondary development rather than as the primary means of dissemination of the pneumonic process.

We would point out, in closing, that from the study of experimental pneumonias in conjunction with spontaneous human pneumonia, infection is primarily by the bronchial route; while the extension in the lung, the invasion of the blood stream and the development of various complications are concomitant with and probably due to a secondary acute interstitial inflammation in the lung.

DISCUSSION

Dr. Edward Weiss (Philadelphia, Pa.): It is perhaps difficult for a practicing physician who has had no especial laboratory training to understand, first, the labor involved in the study, results of which Dr. Permar has given us to-day, and second, to realize the practical value of such a study. I can assure you from personal experience that this work must have been most laborious and time-consuming, and Dr. Permar deserves our gratitude for giving us his results in such a concise manner.

The study is an interesting one in that it indicates the development of a pneumonic process. Anything which gives us information as to the life history of the pathological development of pneumonia is of great interest. I recall reading, a few years ago, the articles by Blake and Cecil regarding the invasion of the pulmonary tract through the lymphatic passages of the walls of the trachea and bronchi, and must confess that it did not seem reasonable to me at the time, in spite of the fact that their work was so thoroughly done, that an infection which comes on with such lightning-like rapidity should develop in this manner. Those cases of pneumonia that we have had the opportunity of examining at autopsy, and particularly those cases, termed lobular, in which we found the bronchiole walls swollen and edematous and the lumen chucked with exudate which extended out into the surrounding alveoli, certainly seemed bronchogenic or aerogenic in dissemination.

A study such as this one has direct practical importance in that it indicates to us the life cycle of the morbid pathological process, and this in turn opens the way for a better understanding of pneumonia.

If I may add a word not directly relevant—it pleased me to see a paper such as this one presented to a medical section. It indicates the interest in a morbid anatomic and histologic study, and marks a return to morbid anatomy, when the most of us are concerned with functional pathology. Though the latter is highly important, it cannot be pursued to the exclusion of the older forms of pathologic teaching and research, which must always remain the fundamental basis for a clear understanding of the science of medicine.

Dr. Samuel R. Haythorn (Pittsburgh, Pa.): Dr. Permar's paper was very comforting to me. After going into the work of Blake and Cecil, my ideas on the pathogenesis of pneumonia were confused. The interpretation appears to depend largely upon what the various authors mean by the development of the "pneumococcic process." Do they mean the distribution of the infection or the distribution of the exudate? To illustrate my point, take the common example of experimental inflammation of the cornea. Place staphylococci in the center of the cornea and a uniform ring of early exudate appears at the margin. Place the staphylococci nearer to one side of the cornea and the bulk of the exudate first appears at the rim nearest the inoculated point. The same thing probably holds in the lung. If the infection is in a lung alveolus the exudate has to pass through the nearest interstitial tissues of the walls to get to it, because the exudate must come largely through the interstitial tissues whether the infection comes by way of the bronchi or not. I think Permar's work shows that the infectious material comes along the bronchi, and that the early appearance of the exudate in the interstitial tissues can be explained on the basis of a response to intra-alveolar stimulus rather than upon the ground that its presence is evidence of an active interstitial dissemination of the infection.

SELECTIONS

RENAL DIAGNOSIS*

MAXWELL LICK, M.D.†

ERIE, PA.

One rarely hears of an exploratory operation on the kidneys, ureters or bladder. Urologic diagnosis has been made almost an exact science. The credit of this belongs to the cystoscope, x-ray and laboratory. By the careful use of these the surgeon's prophecy is rarely disproved at the operating table. With this as a starting point, let us review briefly some of the fundamental procedures in the diagnosis of surgical diseases of the kidney. The personal history of the patient is often obscure and frequently early symptoms are regarded with trivial importance. It may be of value, therefore, to consider first, a few general broad principles regarding symptomatology.

1. Pain: Renal pain is often taken for something else. Perhaps the reason is found in the fact that not always does it follow the orthodox rule of running down the course of the ureter into the bladder. Somehow as a student I got the idea that unless the pain fitted this formula, "it couldn't be so." Kidney pain is located in the loin—the space between the lower border of the ribs and the crest of the ilium, extending backward to the spine, called the costovertebral angle. It is often referred into the epigastrium, downward over the hip and frequently downward over the course of the ureter to the bladder.

During the passage of a stone through the ureter, the pain often gets lower with each successive spell of colic, corresponding to the changes in position of the stone. Pain here is usually referred into the bladder and testicle. Patients have told me that the pain is often felt through the lower bowels and rectum and that there is a desire for stool. The pain is not always acute. It may only be a dull ache or a tired feeling.

The loin is frequently tender to palpation as compared to the opposite side. If right-sided the tenderness may be elicited in the upper right quadrant of the abdomen, or right midabdomen—being mistaken for gall-bladder or appendix disease respectively. In acute pain, epigastric reference is often marked and commonly there is vomiting. The patent medicine makers have done much to foster and promulgate the idea that all backache means "kidney trouble." We all see this frequently in our patients, who come in with a specimen of urine because they have backache.

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*Read before the Crawford County Medical Society.

†Surgeon to St. Vincents Hospital.

In most cases the backache is found not to be as described above but lower down, evenly distributed, over the sacroiliac, or sacrolumbar region. These are due, as you know, to various causes, chief among which are lumbago, sacroiliac disease, pelvic relaxation, flat feet, faulty posture, etc., etc. If you are in doubt in an acute case, between a kidney and ureteral lesion, or an intra-abdominal one, remember that the latter is apt to display more gastro-intestinal signs—nausea, vomiting, constipation, general or local tenderness, a higher elevation of the pulse and fever. Finally in a kidney lesion there are very apt to be bladder signs.

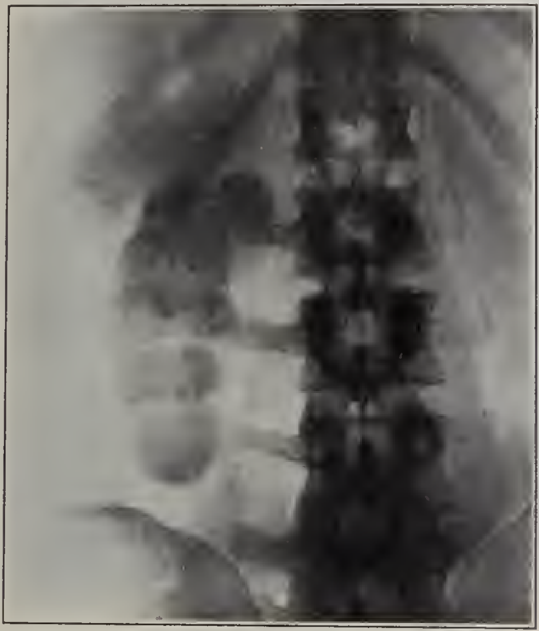

Figure 1.
Tuberculosis of Kidney.

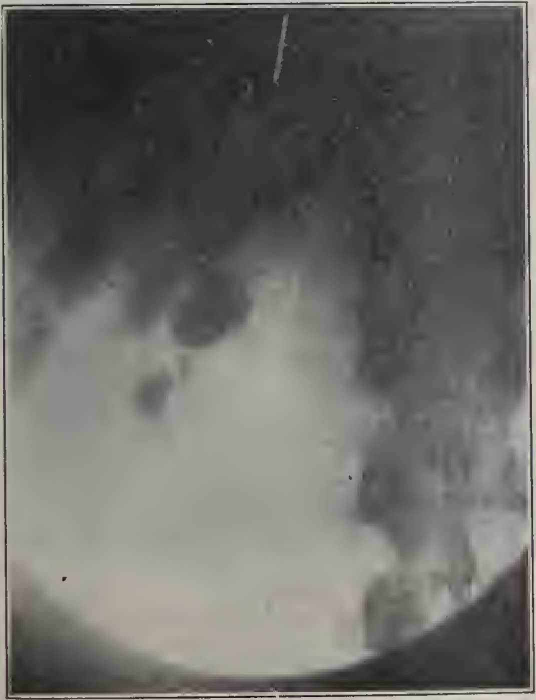

Figure No. 2. C. K.
Calculi.

2. Vesical Signs: It is quite possible to have surgical renal disease without vesical signs. Such may be seen in a perinephric abscess, or an abscess of the parenchyma, or a blocked off pyonephrosis, or a calculus in the kidney substance. However, a careful questioning will usually reveal a history of some periodic attacks of vesical irritability. In the interim between the attacks the bladder may be quite comfortable. With inflammatory products escaping down the ureter into the bladder, infection of the bladder is sure to follow. This in turn makes the organ irritable, with the common signs of frequency of urination, burning and soreness. These, being secondary to the primary disease in the kidney, are often the most prominent, and indeed may be the only signs. Witness, if you please, renal tuberculosis. The first sign is usually an irritable bladder. The patient is commonly treated for cystitis with the usual remedies, together with bladder irrigations. In spite of all treatment the irritability of the bladder continues. Finally some one suspects a tuberculous infection and a long delayed study is made. By this time the disease has been carried downward from the kidney and has involved the ureteral orifice and adjacent bladder wall, so that in many cases the diagnosis is readily made, at a glance through the cystoscope.

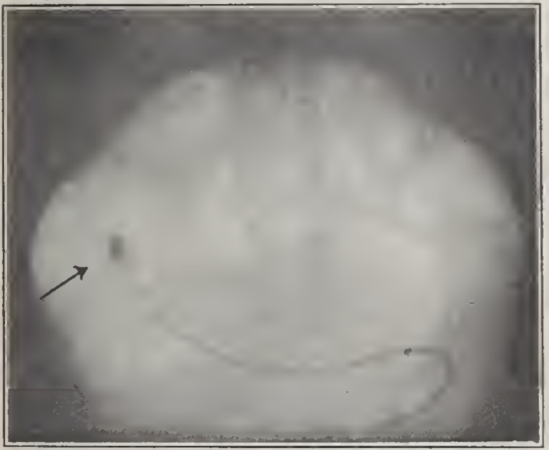

Figure No. 3. Mrs. C. E. S.
Calculus in ureter with X-Ray catheter.

What I mean to point out, is that we should take cognizance of an irritable bladder. We should regard gravely the signs of a bloody urine or a purulent urine. We should be alert to know that these local signs and symptoms may be the expression of trouble in the kidneys above.

With these general considerations in mind, let us now take up a few type cases of common renal surgical disease and follow them through.

TUBERCULOSIS

Miss G. H., age 25, occupation stenographer.

Chief Complaint.—Irritable bladder and mild pain in the right iliac fossa.

History of Previous Illnesses.—The history of an irritable bladder goes back for several years, characterized by spells of frequency and burning. The trouble is worse at night than during the day. Retention of urine for more than an hour or two causes acute pain. On one occasion there was free blood in the urine and of late there has been some aching in both loins. The irritable condition has persisted in spite of all treatment. There has been no loss of weight, no chilliness and no fever. The gastro-intestinal tract is free from symptoms. There are no pulmonary or cardiac symptoms. The periods are 21/4 and normal; slight leucorrhea.

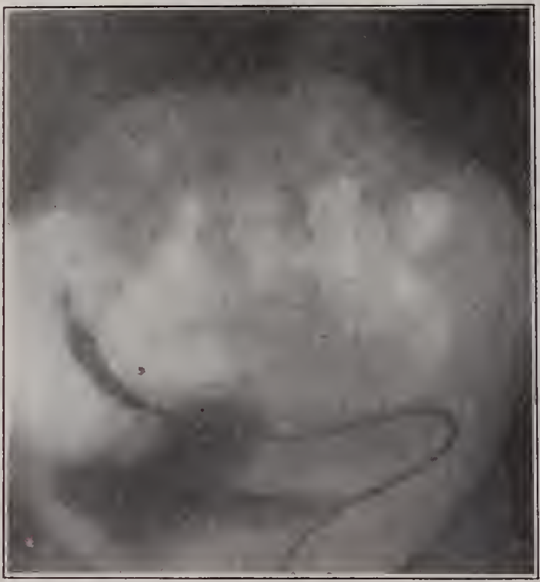

FIGURE No. 4. MRS. C. E. S.
Ureterogram.—Proving shadow to be in ureter.

The previous medical history and family history are unimportant.

Physical Examination.—The patient is an adult with normal station and gait, and with a very pasty complexion. The reflexes are all normal. The tongue is clean and the teeth are free from pyorrhea. The throat is normal. The lungs are normal throughout. The heart is free from murmurs and the rhythm is regular. The abdomen shows very slight tenderness low down in the right iliac fossa. There is no tenderness in either loin and neither kidney is palpable. The vaginal examination reveals a nulliparous vagina with normal generative organs.

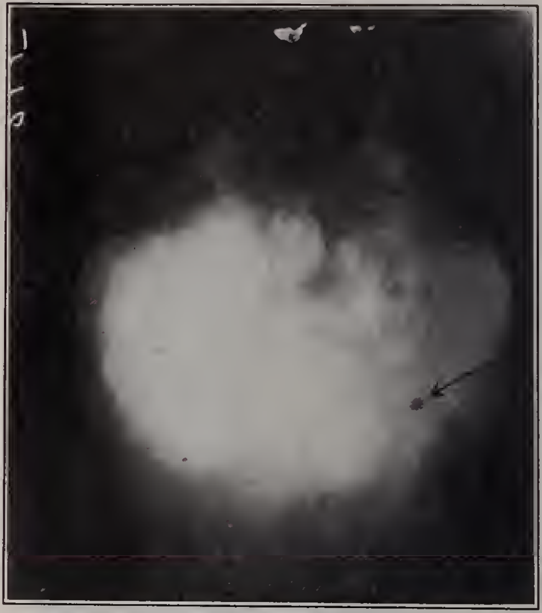

FIGURE No. 5.
Shadow (calculus) in right ureter.

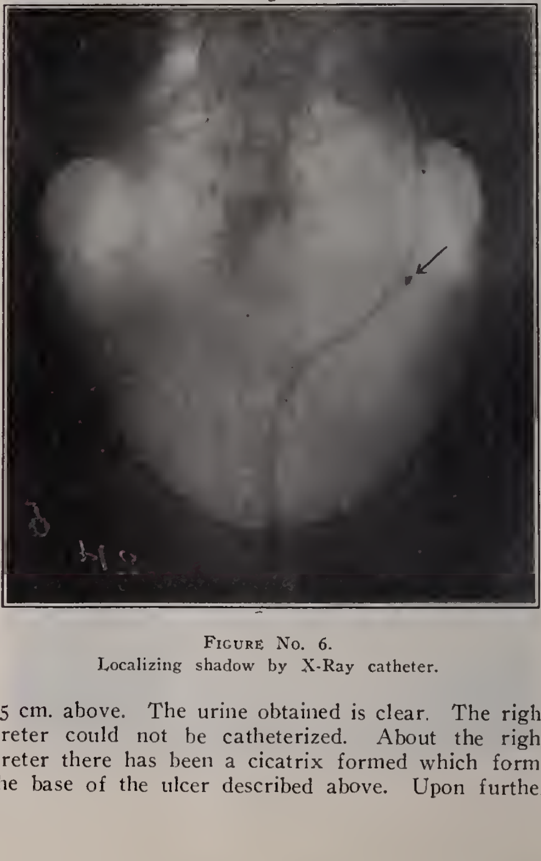

FIGURE No. 6.
Localizing shadow by X-Ray catheter.

Cystoscopy.—The urethra has the presence of a stricture. The bladder capacity is considerably less than normal. The bladder wall is subacutely red everywhere, but mostly on the right side, above and around region of the right ureter. The right ureter has a large mouth standing wide open and does not admit the catheter. Just below there is a raised edematous area, looking something like a wart, and is pale in color. Above it is a definitely ulcerated area with small gray bodies which appear to be tubercules. This area bleeds freely when it is touched with the catheter. The left ureter is normal and patulous to the kidney 25 cm. above. The urine obtained is clear. The right ureter could not be catheterized. About the right ureter there has been a cicatrix formed which forms the base of the ulcer described above. Upon further study, what appeared to be the right ureter standing wide open, is found to be a fold in the inter-ureteric line caused by the cicatrix, which lies just above. The ulcer lying in this area appears to contain the ureter.

Indigocarmine Functional Test (intramuscular).—Dye excreted from the left ureter intense blue within fifteen minutes. No color was seen coming from the right ureter in twenty minutes.

The cystoscopic diagnosis is tuberculosis of the right kidney and ureter with secondary cystitis.

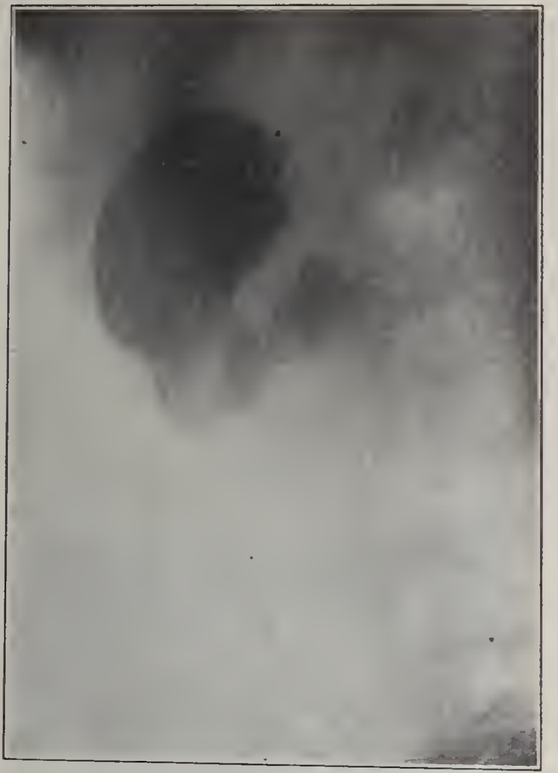

Figure No. 7. Wm. E.
Left Hydronephrosis.

Laboratory (urinalysis).—Bladder specimen (voided), appeared a clear amber color, acidity 85, specific gravity 1010, albumin and sugar negative. There are, however, a few pus cells and a few epithelium cells. The catheterized specimen of the left ureter appeared a clear amber color, albumin and sugar were negative and only a few pus cells were found. Urine smear for T. B. bacillus negative. Blood Wassermann negative.

X-Ray (Fig. 1).—Reveals the left kidney normal in outline and position but slightly increased in size.

Right kidney: The normal shadow is replaced by an irregularly calcified mass which extends from the level of the lower border of the first lumbar vertebra to the crest of the ilium. This shadow is slightly irregular in outline and is divided roughly into five segments or pyramids.

X-Ray diagnosis is extensive tuberculous involvement of the right kidney.

Operation.—The kidney was removed through a Mayo incision. The entire kidney was the seat of caseation. The central part of the kidney was one large cavity filled with caseous material. These were also cortical areas. The kidney was freed with great difficulty. The ureter was clamped and cut and the kidney removed. The ureter was isolated by means of a tube according to the Mayo method. The incision was closed with a small cigarette drain.

The recovery was rapid and pleasant. The cystoscopic examination one year later revealed a normal bladder.

Comment: This case typified the usual symptoms of a tuberculous kidney, viz., a predominance of bladder symptoms. What pain present was in the right iliac fossa, low down over the course of the ureter and not in the kidney region. And this in spite of the fact that the entire kidney was destroyed. One more thing is worthy of note, and this is that the tubercle bacillus was not found in the urine. They are not always found, as the ureter may be closed. I believe that they were present here, as the bladder picture was that of an active lesion. Other examinations would probably have revealed them. In doubtful cases one can inoculate a guinea pig with the urine and examine the animal later for signs of the disease. In this particular case, both the x-ray and the cystoscopic study presented conclusive evidence of the disease. It is an important fact to remember that an intractable cystitis in a young patient points to a tuberculous disease. The organisms can usually be found in the urine and the cystoscope will localize the lesion.

CALCULUS

Case 1.—Mr. C. K., age 22, occupation machinist.

Chief Complaint.—Acute pain in the left loin of colicky nature radiating downward along course of the ureter into the left scrotum.

History of Previous Illnesses.—The history dates back for several years and is characterized by attacks of acute colicky pains as described in the chief complaint. At present there is no irritability of the bladder, but at various times this condition has been quite troublesome. Several years ago following one of these attacks the urine was bloody but there has been no blood for the last three or four years. There has been no nausea or vomiting or no reference of the pain into the epigastrium. Between the attacks of pain the general health is excellent and during the past year the patient has gained twelve pounds. There is present more or less at all times a sense of aching and dull pain in the loin. This is referred downward over the hips. No symptoms referable to other organs.

The previous medical history and family history are unimportant.

Physical Examination.—The general physical examination is negative, except for marked tenderness in the left loin elicited both anteriorly and posteriorly. On deep inspiration the lower pole of the kidney can be palpated.

Cystoscopy.—Urethra normal. Bladder capacity normal. There are no tumors, calculi or diverticulæ. The left ureter presents a red, swollen, pouched appearance. The right ureter appears normal. Both ureters were catheterized without obstruction to the kidneys.

Indigocarmine Functional Test (intramuscular).—The dye appeared within eight minutes from the right kidney and became intensely blue within fifteen minutes.

The left ureter excreted the dye as a very faint blue in twenty minutes.

Laboratory (urinalysis).—Bladder specimen (voided), appearance cloudy, specific gravity 1025, albumin light cloud, sugar negative, microscopic—large number of pus cells. Right kidney specimen normal. Left kidney specimen cloudy in appearance, albumin light cloud, microscopic—many pus cells.

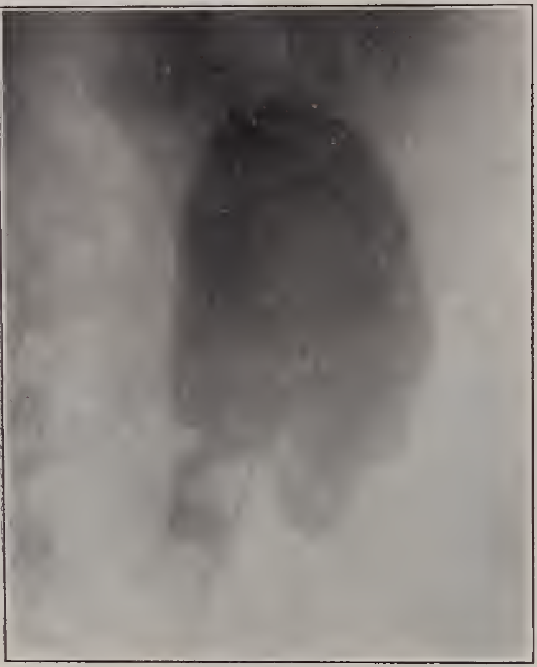

FIGURE NO. 8. WM. E.
Right Hydronephrosis.

X-Ray (Fig. 2).—One large calculus and several smaller ones.

Operation.—Mayo incision. Perirenal adhesions found dense and kidney delivered with difficulty. The stones were not felt in the pelvis so the kidney was split just back of the central line. The stones were found lying high up in the calices wholly imbedded in the kidney substance. The kidney was closed with through and through matress sutures.

The convalescence was rapid and pleasant.

Comment: This case illustrates one which runs true to textbook descriptions. It illustrates one further point, and that is the importance of recognizing the symptoms which he presented as those belonging to the urinary tract. This boy had passed through several hands, including the draft board, without his condition being recognized.

CASE 2.—Mrs. C. E. S., age 26, occupation housewife.

Chief Complaint.—Pain in left loin.

History of Previous Illnesses.—The patient has complained of an aching, dragging sensation in the left loin for several years. At times this pain becomes acute and assumes the character of renal colic, being referred downwards along the course of the left ureter. The bladder at times is exceedingly irritable. During the attacks of pain there is nausea and vomiting and a bearing down sensation in the bowels. At other times there are no digestive or intestinal symptoms. She has noticed for several years a lump in the left side and had been treated for an enlarged spleen. The periods are usually regular, the interval being three weeks and lasting five days. There are no symptoms referable to the pulmonary or circulatory systems.

Previous Medical History.—Appendectomy eight years ago. Family history unimportant.

Physical Examination.—The patient is an adult female with a pasty color. The general reflexes are all normal. The tongue is coated, but the teeth are in good condition. There is no goiter. Lungs and heart are normal throughout. The abdomen reveals a large smooth mass in the left kidney region which fills the left hypochondrium and downwards as far as the umbilicus. It moves with respiration. There is general tenderness along the course of the ureter and over the left portion of the bladder. Right kidney is not palpable. There is the scar of the appendix operation.

Vaginal Examination.—Pelvic organs normal.

Cystoscopy.—Urethra and introitus normal. Bladder is free from infection except for slight trigonitis. The left ureter is retracted upwards and to the left. The catheter can be admitted one and one-half inches. Upon pushing the catheter in strongly a collection of cloudy, purulent urine was tapped to the amount of four ounces. The right ureter is normal and was catheterized to the kidney above. The appearance of the specimen was bloody (traumatic).

Indigocarmine Functional Test (intramuscular).—The dye appeared from the right side in ten minutes and became a normal intensity within twenty minutes. The left ureter excreted no dye in twenty minutes.

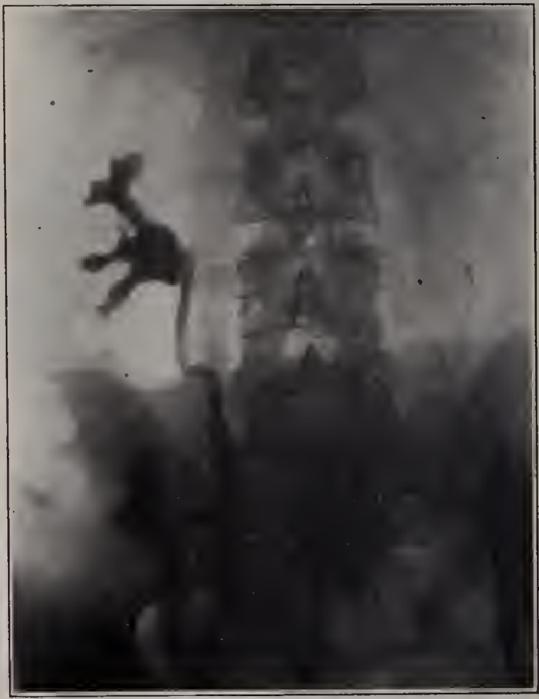

FIGURE NO. 9. MISS E. E.
Normal pyelogram with tortuous ureter.

Cystoscopic Diagnosis.—A stricture of the left ureter or calculus with resulting pyonephrosis.

Laboratory (urinalysis).—Bladder specimen (voided), appearance cloudy, color amber, acidity 52, specific gravity 1025, albumin and sugar negative, microscopic negative. Right ureteral specimen appeared bloody (traumatic), albumin and sugar negative, microscopic negative, except for red blood cells. Left ureteral specimen appeared cloudy, albumin 4-plus, sugar negative, microscopic abundant pus cells. Wassermann not done.

X-Ray (Fig. 3).—There is a shadow of a calculus in the region of the left ureter about one and one-half inches above the bladder. Shadow of right kidney normal. Ureterogram (Fig. 4) shows shadow to be in ureter.

Operation.—Left semilunar abdominal incision. Peritoneum turned forward and ureter isolated. Calculus removed and ureter repaired. One cigarette drain inserted.

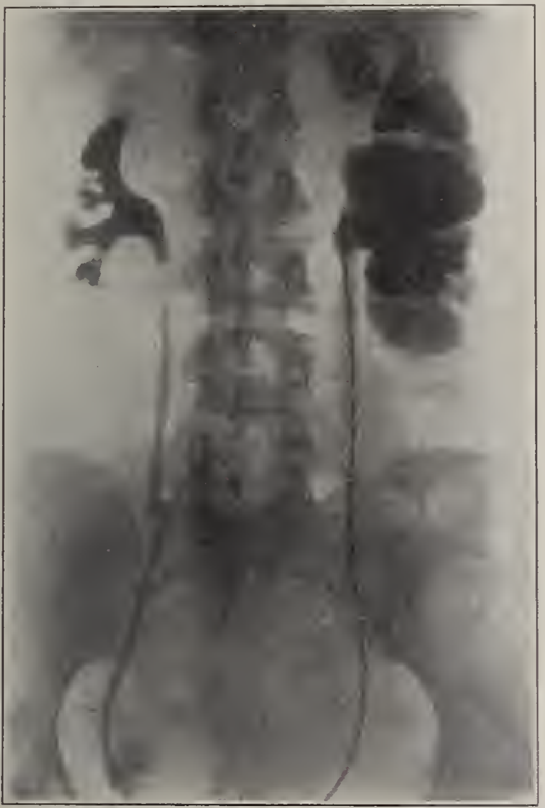

Figure No. 10. Miss E. E.
Normal Pyelogram right—Pyonephrosis left.

The convalescence was normal and without complications. This patient was seen one year later and is entirely well. The enlarged left kidney could no longer be palpated.

Comment: Here again was an unrecognized kidney and ureteral lesion and yet with typical symptoms referable to the urinary tract. There are two factors at work in this case, the calculus itself with its local irritation, and the effect on the kidney by its blocking of the ureter. This resulted first in a distention of the kidney pelvis, which was later followed by infection.

The method of localizing an x-ray shadow is illustrated in this case. In Fig. 3 one sees a shadow which is in the region of the ureter. It might be in the bowel (enterolith) however, or a calcified gland. The x-ray catheter is seen pointing towards it but it was impossible to introduce it further. Fig. 4 (ureterogram) is taken after 25% sodium iodid was injected through the catheter. The solution goes directly up to the shadow, proving it to be in the ureter. Most of it has run back into the bladder.

Fig. 5 shows a small shadow in the region of the ureter. This is proved to be a calculus in Fig. 6 by showing the x-ray catheter passing directly over it. Many of these small stones can be loosened by pushing against them with the catheter, which changes their axis, so that a succeeding attack of pain may drive them through into the bladder. It may be of value to inject oil around them for lubricating purposes. This particular stone came through after passing the catheter.

HYDRONEPHROSIS

Mr. W. E., age 28, occupation linotype operator.

Chief Complaint.—Aching pain in both loins and at times an irritable bladder.

History of Previous Illnesses.—The onset of the trouble has been gradual and has extended over a period of several years and is characterized by dull aching pain in both loins with some tendency for the pain to be referred downward over the hip. There have never been any acute attacks of pain. At times the bladder has been quite irritable and the urine is frequently cloudy. There has been no disturbance of his general health and symptoms referable to the other organs are negative.

Previous medical history and family history are unimportant.

Physical Examination.—Unimportant except for the following. There is mild tenderness in both loins elicited both in front and in the back. On deep inspiration both kidneys are palpable and considerably enlarged.

Cystoscopy.—Urethra normal. Bladder capacity normal. There are no tumors, calculi or diverticulæ. The bladder shows the picture of a chronic cystitis. The ureteral orifices are normal in size, shape and appearance. Both were catheterized without obstruction and two or three ounces of cloudy urine escaped from both kidneys.

Indigocarmine Functional Test (intramuscular).—The dye did not appear from either side until about fifteen minutes, and in twenty-five minutes the color was still faint.

Laboratory (urinalysis).—Bladder specimen (voided), appearance cloudy; albumin, light cloud; sugar negative; microscopic, a few pus cells, many triple phosphates and some mucus. Right ureteral specimen: appearance cloudy and contains a trace of albumin with a few pus cells and triple phosphates. Left ureteral specimen: appearance cloudy and contains a trace of albumin with a few pus cells and triple phosphates.

X-Ray (Figs. 7 and 8).—Sodium iodid 25% was injected into each kidney. The capacity of the renal pelvis on both sides was found to be two or three ounces before any pain was induced. Pictures show a large hydronephrosis of both kidneys. There is complete loss of all normal outline of the kidney pelvis.

Comment: This case illustrates a chronic slow-moving hydronephrosis. The cause was undetermined. There did not seem to be any obstruction in the ureter and inasmuch as the condition was bilateral and there was not much infection present an operation was not advised.

There is another type of hydronephrosis which is intermittent in its character. This is due to some acute blocking of the ureter which is followed by an acute distention of the kidney pelvis with urine. This causes acute renal colic and produces the same symptoms as those of stone, for which it is often mistaken. Occasionally a mass may develop in the anterior loin which disappears suddenly by the obstruction in the ureter being overcome and the urine draining into the bladder. It is not always necessary to make a pyelogram picture to determine the presence of hydronephrosis. A rough and valuable test is to inject the kidney pelvis and determine its capacity. Ordinarily any amount over 10 to 12 c.c. of fluid means that there is a nephrosis present.

Stricture in the ureter, while probably not very common, does occur and is causative. The treatment is dilation. Aberrant blood vessels obstructing the ureter have been noted. Probably the commonest cause is a ureteral calculus.

Fig. 9 shows a normal pyelogram which is of value in comparison with the two preceding. The ureter is tortuous.

PYONEPHROSIS

Miss E. E., age 36, occupation house work.

Chief Complaint.—Mass in lower abdomen; pain in left loin and an irritable bladder.

History of Previous Illnesses.—For several years there has been a lump growing in the lower abdomen which has increased in size until it almost reaches the umbilicus. There has been more or less chronic pain over the entire abdomen and at times nausea and constipation. The periods are regular but very scanty. The left loin at times has been the seat of dull aching pain although the patient attaches very little importance to this. The bladder is at times quite irritable and the urine is cloudy. The general health has been quite poor and the patient has lost considerable weight. There are no symptoms referable to the heart or lungs.

Previous medical history and family history are unimportant.

Physical Examination.—Patient is undernourished and with rather a nephritic color. The tongue is coated and the teeth show a few gold caps and some bad pyorrhea. No goiter. The heart and lungs are normal. A mass can be felt in the center of the lower abdomen half way up to the umbilicus. There is a little tenderness in the right costovertebral angle. The kidneys are not palpable. There is no tenderness in the left costovertebral angle.

Vaginal Examination.—Vulva presents a normal appearance and shows no evidence of infection. Perineum nulliparous. The vaginal examination reveals a large solid tumor apparently growing in the uterus.

Cystoscopy.—Bladder capacity normal. There are no tumors, calculi or diverticulæ. The trigone is rather severely injected. The ureteral orifices are normal in size, shape and position, and one does not appear more red than the other. The right ureter was easily catheterized and a faintly cloudy specimen was obtained. This contained a few pus cells and a light cloud of albumin. The left ureter was catheterized after much difficulty and a very cloudy specimen obtained. This contained large amounts of pus and a heavy cloud of albumin.

Indigocarmine Functional Test (intravenous).—The right kidney excreted the dye normally within three minutes, the color becoming intensely blue within five minutes. The left kidney excreted no dye within ten minutes.

Laboratory (urinalysis).—Cultural slides for left ureteral specimen show presence of staphylococcus. Blood Wassermann negative.

X-Ray (Fig. 10).—Pyelogram made of both kidneys, and you will observe that the right side is normal or practically so. The left one, however, is a large lobulated mass with all normal pelvic architecture lost. The amount of fluid injected into this kidney was over one ounce.

Operation.—Nephrectomy. The kidney was found to be practically nothing but a shell containing pus. The pelvic tumor was not disturbed.

The convalescence was rather difficult due to the general debility of the patient.

Comment: The curious part about this case is that the patient came regarding her pelvic tumor. Thus only by a little clue in the symptoms and the discovery of pus in the urine was the pus kidney discovered. It is certainly true that a bad surgical kidney often gives very little pain. Kidney infections are probably hematogenous in origin, coming from focal areas elsewhere in the body, such as infected tonsils and teeth. This particular case showed the presence of a severe pyorrhea.

No effort has been made to cover all types of surgical diseases of the kidney and if all this has seemed rather elementary the author craves your indulgence. The purpose has been to illustrate the routine method of going over these cases. The clue to the trouble can always be found in a careful history and by proceeding thoroughly in the study along the lines mentioned above, one is rarely mistaken in the diagnosis.

149 West Eighth Street.

MENTAL HYGIENE

JAMES THOMAS WRIGHT, M.D.*
MAYVIEW, PA.

Mental hygiene as a science is of recent origin and deals with the preservation of mental health from infancy throughout life's course, and aids in the prevention of mental disorder, or mental disfunction.

Some of the aims of mental hygiene are to create harmony and mutual healthy coöperation between body and mind and to prevent unnecessary friction, strain, worry or discontentment and dissatisfaction in the adjustments to environment, to life in general, and to society. The individual is also taught to know himself, to find the work which pleases and satisfies him, to adapt himself to the standards of society comfortably and to develop a happy emotional tone with his fellows; also to gratify his wishes or desires in a socially and legally approved way, or to find an outlet through occupation, games or hobbies.

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"Every conscious action is a subconscious reaction," and the importance of mental hygiene being taught in the public schools, along with physiology and personal hygiene cannot be overestimated, for "as the twig is bent so the tree is inclined" to grow, and the fertile and impressionable mind of childhood will retain throughout life the truths so implanted.

Mental hygiene further emphasizes hygienic, rational living, which is essential to health, mental and physical. No one could expect to have robust health and tranquil nerves, who is a glutton, a libertine, an alcoholic, or who spends his nights in exciting games of chance or other dissipation and disregards all the laws of health. Neither can the business man expect health and iron nerves who spends his days in his ill-ventilated, crowded office, who is on a constant nervous strain, and who bolts his meals and has no time for relaxation, fresh air, out-door recreation with innocent and invigorating games, or physical exercise. Common sense must be used. The eight hour system is a good one and should be adopted as a standard in the United States, viz: 8 hours work, 8 hours recreation, and 8 hours sleep.

If a man avoids undue stress, strain or worry; is reasonably satisfied and contented, with ordinarily a happy optimistic outlook on life; has a congenial mate, and is honest and true to himself, and with a fair degree of physical health, he need never have a mental breakdown. But, as Shakespeare said, "To thine own self be true." Conversely, if the opposite be true, he will be subject to many mental disorders.

Mild mental disorders are very common, though due to public opprobium of anything "mental," they go under the name of "nervous" disorders—such as neurasthenia, nervous breakdown, hysteria, etc.

The stigma which the public attaches to any one who has suffered from mental or brain disease, is all wrong and should not be, for the brain of any of us is as liable and as subject to disease as any other part of the body and amenable to the same general principles of medical treatment, and as our science progresses and more is understood of etiology a far greater number of cures are being made than in former years—especially when the patient is seen at the beginning or early stages of the disorder.

Being "nervous" really means being *irritable* and the cause is central, or mental. Every thought or act has its reason for existence, and where there is a prolonged or unusual reaction between an individual and environment, or society, we have a mental disorder or breakdown following. Mental hygiene teaches us to avoid this. The reactions of all people to environment, circumstances, etc., differ more or less, however, depending on the person's mental make-up, character, traits, trends, etc., and allow of a certain degree of latitude perfectly compatible with normal mental health. In studying a patient it is vitally essential, then, to know his former normal character, disposition, peculiarities, traits, trends or tendencies, so as to make a comparative study to see how far he has deviated from what for him was normalcy.

These traits, or characteristics, and trends, or the way the traits are usually exhibited, are very important to the child, and unless corrected and directed in the right direction and the right way, will permanently influence his character and future mental life. Mental hygiene offers a great deal during the first five or six years of the child's life, for then it is that strong impressions can be made on his receptive mind and he can be instructed and trained to form proper mental attitudes, characteristics, traits, etc. These later become his habits; and thus character is formed. "Character" is what we really are, as distinguished from "reputation" or what the public thinks we are. Also at this time the child's conduct is trained and corrected so his behaviour before the public will be conventional and pleasing.

Mental hygiene admonishes parents that to have mentally healthy children they must raise and train them for their own happiness and future, and not from any selfish parental motive, and that an emotionally normal mother will give her child a far better start in life toward a happy and successful career.

Women should not assume the obligations of maternity — and posterity — in an ignorant or careless way, and all girls should be instructed in sex hygiene and taught the dignity and responsibility of motherhood.

The attitude of parents toward their children, and their dealings with them, are important things, as children are just and impartial critics and cannot be lied to, abused or deceived with impunity; as their respect and reverence once lost is as a rule forever lost, and control is lost with it!

Mental hygiene also teaches how to deal with and train mentally defective children, either at home or in schools, or institutions provided for them by the state; and to prevent delinquency and crime among children in general, as well as grown-ups. The "National Committee for Mental Hygiene" is to be commended for this great work which it has undertaken and is accomplishing.†

Children are easily spoiled and an "only child" who is petted and pampered, and without the controlling influence other children exert, is usually an abomination and a pest, and the child in later life becomes abnormally selfish, irritable, whimsical and neurotic and paves the way to a chronic insanity which may develop from the bad character traits, stresses, trends and conflicts. Hence the value of sane and intelligent early training as outlined in mental hygiene.

A happy person has numerous outlets for his feelings, while brooding represents a damming up of the feelings and indicates unhappiness, usually with regressive tendencies.

Mental hygiene says that parents should never correct their children harshly or in a domineering way, nor emphasize their deficiencies, for it destroys their initiative and lays a basis for an inferiority trend and a neurosis later in life. Fear, above all things, should not be implanted in the innocent child's mentality, as it is the one factor most prominent in all types of mental disease, and would be a constant hindrance to the child's future success. Avoid it as you would a pestilence! On the contrary, teach love, mercy, truth, justice, honesty, kindness, sympathy, industry, economy, respect for the rights of others, and the all encompassing love and protection of an omnipotent and beneficent Creator and your child won't go far wrong.

Mental hygiene further says that during adolescence the child should be taught to be self-dependent, independent of the parents, and to take care of and look out for himself and not be bound or tied to the family (clannishness), but to take an active interest in the outside world in general and cultivate a broad unselfish view of life and events. In this way abnormal thought and conduct may be avoided, the emotions kept under control, and the following bad traits be avoided: selfishness, sensitiveness, stubbornness, suspiciousness, seclusiveness, offensiveness, dependence on others, pessimism and abnormal seriousness, a feeling of inferiority or fear, etc.

The desire for power and public acclaim is innate and dominant in every normal human being, Freud's sex theory to the contrary notwithstanding, and motivates all great actions or world events. Still the study of the sex instinct is of primal importance, as convention and society demand its repression within narrow limits, and that energy utilized otherwise. Thus it is of paramount importance that the child be taught in an honest, fearless way the functions of the sex organs, and sex hygiene, for many cases of insanity have their apparent origin in unnatural repression, or abuse, of the sexual functions, which causes a deleterious or injurious reaction on the higher intellectual centers. We are only cultivated animals after all, and every individual should know his capabilities and limitations, for to refuse to admit such is to invite disaster.

Mental hygiene teaches that to be happy and retain a sound mentality, every adult must have an object in life, an aim, a goal to attain. Nature decrees it so, and an idle, aimless existence is an anomaly and abhorrent to her. These vocations and avocations give a healthy outlet for his energies and offer a method of distraction and release from his worries, troubles, brooding, etc. Hence the introduction of "Occupational Therapy" into our state hospitals as a method of treatment, and which is especially emphasized in the Danville State Hospital under the direction of the Superintendent, Dr. J. Allen Jackson. It helps the patient to dissipate his conflicts between himself, his wishes and environment, or social usage, and assists him in readjusting and changing his attitude in general and thus assists in his cure and restoration.

Modern psychology teaches that what is called "will" is really "wish." Hence one may have a strong or a weak will power according to the intensity of the "wish," and a strong wish or will power is fulfilled by *action* and accomplishment, while a weak will power or wish is fulfilled in thought alone, i. e., day dreams. This reaction to wish is important, as has been shown by psychoanalysis.

Psychoanalysis in trained hands is useful in exploring our subconscious mental life and uncovering and bringing to light hidden desires, repressions, fears, conflicts, complexes, prejudices, antagonisms, etc., that may be gotten rid of and removed from the mental consciousness, and the patient's attitude toward life, toward himself, and toward society corrected. However, it should be practiced only by skilled men, as it is a two-edged sword and capable of doing much harm by analyzing those who should not be analyzed, and converting a mild disorder into a grave one. I have seen instances of this happen. Where there is physical or organic disease with the psychosis, psychoanalysis is impotent and should neither be used nor attempted.

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† Those interested may write the Secretary of the National Committee for Mental Hygiene, 370 7th Ave., New York City, for further information and literature.

The "wish" is universal and is either conscious or unconscious (longing, craving, desire, etc.) and dominates our lives according to our "reaction" to it; the fulfillment or neutralization of which creates a happy, emotional tone.

Ancient religious teachers, philosophers and the Church recognized the value of "confession" in bringing to the surface hidden sins, sorrows, fears, etc., and in relieving the burdened heart and soul of the penitent by promises of forgiveness and peace; thus giving him a happy and new outlook on life and the world. Man is so constituted that it is essential that he in times of stress unburden himself and his mind, either through religion or through the medium of oblivion-producing drugs or alcohol, with the consequent disastrous results. Christ recognized this need and these facts, and dwelt upon them and offered peace and repose to the troubled soul by the exercise of faith alone. Religion of some kind is a necessity to humanity.

Mental hygienists early advocated the establishment of "mental clinics" and the importance of this movement is being demonstrated by a few state hospitals, the Danville State Hospital being among the first to do so. The clinics are under the auspices of the Clinical Director and held at various towns and cities in the district. Clinics, lectures on mental hygiene and prevention, advice, aid, criticism and pre-hospital as well as post-hospital treatment are given. With the aid of the social workers, records are kept on paroled patients and their progress.

These clinics are of the greatest value, and help to convert the hospital from a custodial institution into a hospital proper and a clearing house for the recoverable cases. They permit of the extramural or home treatment of many patients, the prevention of many mental breakdowns, and are an economic saving to the state, as well as a source of reliable instruction and advice in these momentous matters. They should be liberally supported by the state as a matter of political economy, if for no other reason, and from humanitarian motives.

Kings Park State Hospital of New York and Danville State Hospital of Pennsylvania are pioneers in this line of work in the United States and already the results have been large with both institutions.

Mental hygiene, as has been shown, offers many things of value to the general practitioner of medicine in the early recognition and treatment of mental disorders, as well as their prevention, as it is into his hands these cases first fall. It behooves us, therefore, as physicians, to familiarize ourselves thoroughly with its teachings in order that we may possess definite professional knowledge which will aid us in combating mental maladies. It is to this end, and to give the profession essential facts, that this article was written.

PITTSBURGH ACADEMY OF MEDICINE

ABSTRACTS

SOME ETIOLOGICAL FACTORS IN THE PRODUCTION OF ORGANIC HEART DISEASE

ELLIS M. FROST, M.D.

The purpose of this paper is to present a fair statement of current views concerning the relation of acute rheumatic fever, certain bacterial infections and syphilis to the production of endocardial, myocardial, pericardial and aortic disease. It must be borne in mind that cardiac disease is never primary, that it develops secondary to a local or general infection, most commonly of one of the types named, which becomes localized in some part of the heart structure or in the aorta.

Rheumatic fever still holds first place. Grouped with it possibly should be acute tonsillitis which frequently precedes the usual arthritic symptoms and signs of rheumatism and chorea. That these are all strep-viridans infections is probably not true, but the cardiac phase of the clinical picture is certainly identical in them all. Strep-viridans has been isolated from the valves of some rheumatic hearts but this is interpreted as a secondary implantation and not as the primary cause of the valvulitis since the typical clinical picture in rheumatic fever is totally unlike that of an out and out green strep. endocarditis, which is long drawn out and does not tend to heal. This group, as is well known, picks out most frequently the mitral valves, but the aortic valves are also very frequently involved. Contrary to general belief the tricuspid is also involved, in proof of which is the record of Libman in two series of cases of proven rheumatic fever, one of which in 18 cases showed vegetations in 66%, and in the other 56 cases with 55% on the tricuspid valve. We have been impressed with the fact that few children observed with rheumatic history are free from clinical evidence of valvular damage, while very few adults admitted with initial attack develop signs of endocarditis.

The rheumatic group produces a verrucose endocarditis beginning at the edges of the valve, where friction is greatest, and probably on that account local resistance lowest. It is prone to attack previously healthy valves. There is first slight erosion of endothelium and on this area a deposit of fibrin which organizes, producing a rough irregular surface. Contractions of the organized fibrins follow in the leaking process, the valves or their edges become unevenly shrunken, thickened, adherent or calcified, resulting in incompetency or later stenosis of the orifice. Note should be made of the fact that endocarditis of rheumatic fever is relatively benign in the sense that it has a tendency to heal and that it is not primarily destructive in contradistinction to that of acute and subacute bacterial endocarditis later to be described.

Bacterial Infections: This group includes strep-viridans, strep-hemolyticus, pneumococcus, gonococcus, staphylococcus. While the rheumatic group is responsible for the production of a simple or relatively benign verrucose valvulitis which tends to recovery with scarring, this group of organisms produces an endocarditis with far more destructive lesions of endocardium and far graver prognosis.

Streptococcus Viridans is responsible for 90% of cases of subacute bacterial endocarditis—the other 10% being due to B. influenza. These organisms present in diseased tonsils, alveolar abscess or gall-bladder may be latent until carried into the blood stream by tooth extraction, acute tonsillitis or pleurisy. This event results in the clinical picture of an acute general septic infection which persists over a period of months, often with periods of improvement. Signs of endocarditis may appear early, but often are not of a definite type, so that the true nature of the infection may not be recognized. Positive cultures of strep-viridans may be reported but frequently are sterile even during the active stage.

The vegetations are irregular small nodules, often of a greenish yellow color, and as a rule not so characteristically ulcerative and destructive as the lesion associated with the strep-hemolyticus, gonococcus, pneumococcus or staphylococcus, but relatively more so than the valvular lesions of the rheumatic group.

Streptococcus, Hemolyticus, Staphylococcus, Gonococcus, Pneumococcus: One of these organisms is responsible in most cases for acute, septic or malignant endocarditis, invariably a fatal condition,

A suppuration—erysipelas—cellulitis—gonorrhea or pneumonia—is the beginning, followed by localization and implantation of organism on aortic or mitral valves, or on both. As in the subacute type of endocarditis, valves previously damaged are more susceptible. The vegetations may vary in size from those quite small to those 1.5 to 2 cm. across. They are decidedly proliferative and the whole inflammatory process is more destructive both to affected valves and heart than that due to the other groups described, progressing rapidly to the extent of valve rupture and perforation, erosive perforation of cardiac septa, abscess formation and mycotic aneurysm. Embolism and infarcts are relatively common owing to the proliferative and fragile character of the vegetations.

Syphilis is a vesicular not a valvular disease, and while many good clinicians still speak and write of syphilitic aortic valvulitis as a primary condition and of syphilis as the most frequent cause of aortic regurgitation, their conception is in all probability incorrect, as the valves are involved as an extension of the process from a syphilitic aortitis. The spirochete primarily attacks the aorta (not the cusps) in its proximal portion down into the sinuses of Valsalva, where it frequently stops. If the valves be involved, it is seen to be an extension of the process downward from the syphilitic aorta. The aortic valves are never involved in syphilis except in association with a specific aortitis.

PSEUDOHERMAPHRODITISM MASCULINUS EXTERNUS

N. H. BENNETT, M.D.

The case here reported is that of a patient fifty-four years of age, who has always been regarded as a refined and intelligent woman in the community in which she lives. She has been married for the past 30 years. She has never menstruated and was never pregnant.

Twenty-five years ago she consulted a physician for a recurring tumor in the left inguinal region, and was told that an operation was necessary, to which she consented. Her husband was furthermore advised of the impossibility of his wife ever becoming pregnant. He accordingly asked for a consultant before the operation took place, and unfortunately the patient overheard some of the friendly disagreement of the consultants and left the hospital very much perturbed, although ignorant of the true facts in the case. This tumor sometime later became fixed on the outside as did a smaller one also on the right side. The one on the left side continued slowly to enlarge and was carried in a bag suspended from a belt around the waist. Owing to a rapid increase in the size of the tumor, and the extreme difficulty in locomotion, she found it necessary to seek relief.

The general appearance was that of an intelligent woman, whose features were decidedly of the feminine type. Her hair was long and snow white, her voice high pitched and clear. There was no evidence of any beard or unusual growth of hair on the face.

The breasts were well formed and fairly firm. The body contour resembled that of a woman. Arising from the left inguinal region there was a large tumor, which extended down to the knee, oval in shape and about 8 inches in width at its greatest diameter. Fluctuation was present in the greater part of the tumor and light was transmitted through its lower half. Within the upper half, a firm nodular mass was felt.

In the right inguinal region a much smaller tumor was present, nodular and fixed. No impulse was present on coughing.

The labia majora were thickened and distorted. The labia minora were well formed. The clitoris was about twice the normal size, and the urinary meatus opened on its under surface, much the same as is noted in hypospadiasis. The vagina admitted two fingers and was fully 2½ inches deep, but ended in a blind pouch. No cervix, uterus or ovaries could be made out.

At operation, after incising the skin and subcutaneous tissues, a large quantity of clear straw-colored fluid escaped, resembling that seen in a hydrocele. The inner tumor was exposed and found to be about 10 inches long and 7 inches wide. Its surface was smooth and covered by many large dilated veins. Section through this tumor showed it composed of one large cyst, and numerous smaller ones which contained clear, straw-colored fluid. Although the inguinal canal was well exposed, no structure which resembled a round ligament or spermatic cord could be identified. The blood vessels were exceedingly large and numerous.

The tumor excised from the right inguinal region was an oval body about 2½ inches long and 1½ inches wide, consisting of a small fibrous mass and numerous small cysts, containing clear fluid. A cord prolongation was attached to this mass. Section showed it to be without a lumen.

On the inner surface of the sack which enclosed the larger tumor on the left side was found a solid tumor 3 inches long and 1½ inches wide, and having the general appearance and consistency of a uterus, but without any adnexal structures. Section failed to reveal any mucosa or lumen. Microscopic examination also failed to show any structures typical of the uterus. Microscopic examinations of the cystic tumors showed typical testicular glandular structure and have been classed as simple cyst adenoma of the testicles without any evidence of malignant change.

It is interesting to note that this patient has a sister whose daughter, now 28 years of age and married for 6 years, has also never menstruated, and has been told by two physicians that she can never menstruate or become pregnant.

CHRONIC ULCERATIVE COLITIS

D. H. BOYD, M.D.

D. M., female, age 5, was admitted to the hospital June 15, 1923. Her father and mother were living and well, one brother was living and well. There was no history of exposure to tuberculosis. She was born normally but apparently was improperly fed, as she had frequent gastro-intestinal upsets during the first two years of life, alternating attacks of diarrhea and constipation. She did not walk until she was 3½ years old. After her second year she was apparently well except for occasional "colds." She had none of the infectious diseases of childhood.

In April, 1923, she had an acute attack of dysentery — rather severe — which her mother attributed to Easter candy. Her stools then were very watery, 8 to 12 in 24 hours, very foul odor, some mucus but no blood. In about two weeks she seemed better but still had 3 or 4 stools a day and the odor was bad. In May the diarrhea became more persistent and marked and she had some elevation of temperature at times. She gradually grew worse until her admission to the hospital, at which time her temperature was 103°. She had a mild delirium at times, was rather emaciated, very fretful and restless and had 8 to 10 watery foul stools a day. During this time no blood had been noticed in her stools. Physical examination on admission showed a thin anemic-looking child, restless, cried when approached, with dry lips, coated tongue, pharynx red with septic tonsils, crypts containing a large amount of caseous material, abdomen distended, tympanitic, somewhat rigid, apparently tender all over abdomen, slight enlargement of the liver, extremities generally sensitive, reflexes normal, temperature 102.5°, pulse 140, respirations 30.

During her stay in the hospital she was delirious at times, getting out of bed, crying, restless, vomited occasionally, had 4 or 5 liquid, yellow foul stools day and night, with some pain. On the fourth day after admission she had a large hemorrhage from the rectum and thereafter nearly all her stools contained blood clots. The blood count on admission was 4,400,000 red cells, 80% hemoglobin, 9,200 leucocytes; one week later, 2,650,000 red cells, 35% hemoglobin, 10,000 leucocytes. A stool examination showed many red blood cells, pus cells, some mucus, no parasites. The blood culture was negative, a Widal test was negative, a von Pirquet test was negative. Agglutination tests for dysentery bacilli were not done. The day of her death she developed numerous petechial hemorrhages in various places over the body and had several slight convulsive attacks.

Autopsy Report: About 50 c.c. of clear, yellow fluid in the abdomen. Intestines showed slight injection of vessels throughout the ileum. Peyer's patches showed some hyperplasia. At the ileocecal valve was the beginning of an ulcerative process. The ulcers varied from the size of a pin-head to that of a pea or larger; they extended through the mucosa into the muscular coat; no perforation. They were diffusely scattered throughout the whole colon. Spleen was about twice normal size, somewhat congested.

Liver was larger than normal and very pale. Microscopic examination showed an inflammation and ulceration of the colon involving the muscular coat, but no evidence of tuberculosis and no ameba or other intestinal parasites could be found.

The chronic recurring dysentery with watery, bloody passages, marked emaciation, persistence of symptoms in spite of treatment, and the absence of any known etiological factor such as the bacillus dysenteriæ, ameba, Balantidium coli or tuberculosis made a definite clinical entity. There is a persistence of the dysentery in spite of all medical treatment. The duration varies from months to years. The ages of the patients reported byHelmholz were 8 to 10 years. In his experience the prognosis under medical treatment is bad. Saline irrigations and large doses of bismuth should be tried. Logan uses massive doses of iodin by mouth. If the patient does not improve in the course of six weeks or two months under medical treatment, it is advisable to operate. The operation of choice is the one devised by Brown, consisting of an ileotomy with the establishment of a complete fecal fistula, through the lower loop of which the colon can be irrigated.

CASE OF CONGENITAL SYPHILIS WITH APPARENTY HEALTHY PARENTS

MOSES H. BAKER, M.D.

Three years ago, Dr. Williams of Johns Hopkins, reported his experience with the Wassermann in obstetrics and compared its value with that of placental examinations in the diagnosis of congenital syphilis. He concluded that placental examination gives more reliable information than Wassermann tests on either the mother's blood or blood from the umbilical cord or both.

Since that time, several cases have been observed by the writer with negative tests on either the mother or father, but the one here reported is the first with apparently healthy parents and negative Wassermann tests on both parents and umbilical cord blood. This patient was a healthy full term baby and a Wassermann test done on the umbilical cord; blood was reported negative at time of birth. There were no manifestations of disease until four weeks of age, when "snuffles" began to interfere with respiration and nursing. The baby began losing weight and strength and a skin rash consisting of brown spots appeared over the back. A Wassermann test was done on both parents by a competent physician and found negative in each instance. However, the signs of congenital syphilis were so marked that the baby was put on antisyphilitic treatment and was showing distinct improvement. The patient showed considerable emaciation and breathing was difficult and accompanied by a whistling sound in the nose. Over the back were numerous brown patches with definite edges. No general glandular enlargement or deformities of bones or external swelling, redness or depression of nose. The cornea were clear and there were no fissures at angles of mouth. The Wassermann was very strongly positive. Antisyphilitic treatment was continued in the form of mercury innuctions and the Wassermann test repeated after 4 weeks and again found very strongly positive.

The object in reporting this case is to invite discussion as to the value of routine examinations of placenta in obstetrical work. Dr. Williams states that in his experience the microscopic examination of the placenta tallies with the clinical findings of living children and the anatomical findings at autopsy of dead children in over 80% of the cases, which is in marked contrast to the 40% obtained from positive maternal Wassermann.

PRESENT STATUS OF LUMINAL THERAPY

W. H. MAYER, M.D.

Hauptman in 1912 first called attention to the use of luminal as an anti-convulsive. This drug has been used in many conditions other than as an hypnotic. The dose of the drug as advertised is somewhat higher than it is customary to use.

It has been administered especially in those cases of epileptics which suffer frequent attacks. It has been used alone and in combination with bromides in epilepsy. In a number of cases the results have been excellent. In the *petit mal* types, or in the so-called epileptic equivalents, splendid results have been obtained. In the true type of migraine the results have also been good, but in the toxic headache it is worse than useless. Much has been said about its effect on the kidney, but thorough studies on patients who have taken the drug over a long period have not revealed any particular danger.

Frequently individuals suffer very intense vertigo after its administration, and occasionally skin eruptions appear which are transient in character and which are, without a doubt, due to the drug. Small doses have been of value in anxiety states, but in the definite psychoses the drug appears useless.

Frederick B. Utley, M. D. Secretary.

THE PITTSBURGH OPHTHALMOLOGICAL SOCIETY

DR. EDWARD B. HECKEL, Presiding

At the invitation of Dr. J. B. McMurray, the meeting was held at his office in Washington, Pa. By vote of the Society, the scientific part of the meeting was given over to Dr. McMurray for the presentation of clinical cases. After the meeting, Dr. McMurray entertained the Society at dinner at the George Washington Hotel.

ANTERIOR BRAIN TUMOR

S. W., female, aged 43. Had always enjoyed good health. Was struck down by an automobile two years ago, and was unconscious for a short period, but recovered and was well until six weeks prior to first visit to the office. At that time, she complained of severe neuralgic pain in right side of the face, general weakness and malaise. Examination of the eyes showed she had a congenital alternating divergent squint. Vision in each eye was 6/4. Cornea, anterior chamber, iris, lens, media and fundus were found negative in each eye. Repeated examination during the six weeks found the fundi negative. During the last two weeks she was in the hospital, a diagnosis of anterior cerebral brain tumor was made, the diagnosis being based on the absence of focal symptoms and the development of vesical and rectal incontinence. Two days prior to death, patient developed a low-grade papillitis. Autopsy showed a large tumor in the anterior lobe. From an ophthalmological standpoint, the eye remained negative until two days prior to death.

POSTERIOR BRAIN TUMOR

K. T., female, aged 19. On October 7, 1922, she came complaining of headache and blurring of print. She had had some headache all the summer before, but not enough to annoy her much. Vision at that time in the right eye was 6/6, left eye 6/4. With correction of plus 1.75 D. sphere, combined with plus .50 S. cy. ax. 90°, vision in each eye was 6/4. No fundus changes were found at that time. October 24, 1922, she was again examined because of continued headaches. Examination showed beginning edema of the retina surrounding the disks, with blurring of edges. She was advised to go to the hospital, but was not admitted until November 11, 1922, at which time the optic disks were much swollen and the fields contracted; vision reduced in right eye to 6/12 and in left eye to 6/15. The headache at that time was quite severe and relieved only by spinal puncture. Spinal fluid was under pressure and was negative to Wassermann. Cell count was normal. Swelling of the disks increased until December 14, 1922, when a decompression was done in the right temporal region in the hope of postponing any further involvement of the optic nerve. The headache, vomiting and dizziness were relieved; vision has remained stationary. Six months later, patient still has enough vision to go about alone.

BRAIN TUMOR

Female, aged about 17. She came for severe headache and failing vision. In the spring of 1921, vision became so bad that she had to discontinue school work. Had always been very hyperopic, but with correction had vision of 6/6 in each eye. In spring of 1921, vision was reduced to 6/20 in each eye. There was no change in the disks and nothing of importance in the fields. Headaches could not be relieved. During the winter of 1922, headaches became severe. X-ray plates of head showed cloudiness over right frontal. The frontal sinus region was opened and the sinus found to be absent, but following the operation, patient had relief from headache for a couple of weeks. A second operation was done to relieve what was thought might be an abscess in the frontal region. Again pain was relieved, but no abscess found. The slight lowering of pressure evidently was the cause of the relief. At no time was there any change in the disk. The patient recently has been so sick that no fields could be taken. Her vision remains poor, but does not seem to be failing. Since presenting this case, the diagnosis has been changed from brain abscess to brain tumor, probably located near the floor of the fourth ventricle, with pressure on the optic nerves near their origin, which probably accounts for the failing vision, the lack of fundus findings and the peculiar fields Patient has had two temporal decompressions and at the present time is free from pain; vision not improved, fundus condition apparently normal.

DETACHMENT OF RETINA

G. M., male, aged 19. On July 8, 1922, patient came complaining of pain in right eye, which had begun the preceding April. On entering school, the school examiner reported he had normal vision in each eye. Patient played football during the fall and basketball during the winter. Examination showed fluid vitreous, with floating opacities and an extensive retinal detachment, well forward and extending well up on the temporal side and on the nasal side. Transillumination did not suggest neoplasm. This is evidently a case of traumatic detachment of the retina.

CONGENITAL SUBLUXATION OF LENS

Female, aged about 30. Came for headaches and nausea after close work. Has worn glasses six years; last change three years ago. Awakens with pain in the head, which usually gets better during the day. Has nausea after reading, beginning in about ten minutes, and if she continues to read will vomit. Vision, without correction, is: O. D. 2/60; O. S., hand movements only. The right lens is dislocated outward. With correction of minus 7.00 D. vision in right eye is improved to 6/30.

OSTEOMA OF ORBIT

Male, aged 32. In 1917 was struck in left eye with a hammer. Some weeks afterward noticed eye was becoming prominent. This was not accompanied with any pain, but vision was double occasionally. At that time he had no demonstrable diplopia, nor any evidence of muscular imbalance. Palpation showed a hard mass, beginning just back of the lachrymal groove and extending into the orbit. The nose revealed nothing, except it was very narrow in the upper straits. Patient was kept under observation and in January, 1917, was presented before the Pittsburgh Ophthalmological Society, where the suggestion was made that the mass might be a mucocele, although on palpation it seemed too hard. In February, 1919, following two rather acute attacks of pain in the left frontal region, an operation was advised. A Killian incision was made and the inner wall of the orbit exposed. The frontal sinus was opened above the orbital ridge and found full of pus and mucoid secretion. An attempt was made to pass a probe into the nose, through the nasal duct, and found impossible. An exostosis, originating in the ethmoid, of ivory hardness, and extending into the orbit, blocked the normal drainage from the frontal sinus. Drainage of the left frontal sinus was made into the right nostril and remains open to this day. At the present time, the eye is much more prominent than it was four years ago, but the patient does not have any diplopia. The case is presented to show this interesting condition, i. e., the marked proptosis, with no diplopia. The patient has persistent fistula under the left frontal. Entrance into the nose is impossible on account of the extent and hardness of the osteoma.

DEGENERATION OF GLOBE FOLLOWING CONTUSION

Male, aged about 15, came for blindness in right eye. Last basket ball season was hit in the right eye with a basket ball. Thinks vision was affected immediately after the injury. Five weeks ago was struck in the right eye with the palm of a fellow player's hand. Has had some pain for a couple of days. Examination shows redness around the cornea, anterior chamber shallow, lens entirely opaque, tension normal. Light perception not good, consensual reflex prompt, but direct very sluggish. Transillumination shows iris atrophied throughout the entire extent, with the exception of a little place at the upper extremity of the 90° line. Patient has undoubtedly had, in addition to the detached retina at the time of the injury, a subsequent intra-ocular inflammation to account for the degenerative changes occurring later.

ATYPICAL PARENCHYMATOUS KERATITIS

Male, aged 7. Left eye had a spot on it. Mother noticed eye getting white over a year ago. She thinks spot disappears at times, but this is doubtful. Right eye, vision 20/20; left eye, 20/100. Examination shows a very dense, whitish, infiltrated area, center of left cornea. The infiltrated areas are not coalesced, but appear in five areas rather closely placed in center of cornea. They are quite deep in the substance of the cornea. There is some new vessel formation from the corneoscleral margin. The patient has notched teeth. No Wassermann made.

George H. Shuman, M.D., Secretary.

PHILADELPHIA GENERAL HOSPITAL

MONTHLY CASE REPORTS

BY THE STAFF OF THE PSYCHOPATHIC DEPARTMENT

A case of interest to the general practitioner, illustrative of a type frequently seen in the psychopathic wards.

E. W., a well-built man, twenty-nine years old, had been complaining for six months of fears, a feeling of "dropping down," and inability to get things clear in his mind. This first stage was followed by hallucinations of voices and lights. When sent to the Hospital he had delusions of harm about to be done to him.

The man's heredity was gone. The form of his body showed no signs of physical degeneration. Examination showed no disease of the chest, abdomen, or other parts, but as he stood stripped, there were signs of disordered physiology; his pupils were enormously dilated, hands and feet red, congested and profusely sweating; tongue was coated in the center; mucous membrane bright red and skin pale.

Pulse: Patient lying, 80; standing, 110. Blood pressure: Lying, systolic, 142; diastolic, 80; standing, systolic, 122; diastolic, 70. Blood: Total white corpuscles, 10,800; total red corpuscles, 3,400,000; differential, polys, 68%; lymphocytes, 32%.

Here was evidence enough of a general circulatory dysfunction shown in the failure of the vasomotor system to accommodate to the effort of the change in position of the body, in that the blood-pressure fell on standing, and the pulse was accelerated excessively.

The fluroscopic examination showed the barium moving in a normal way unil it reached the large intestine, where no peristalsis was visible and atonic stasis developed. There was no bowel movement for three days. Examination of the stool showed it dry, acid, with Gram-positive organisms 2 plus, Gram-negative, 3 plus; great predominance of cocci, almost complete absence of bacilli; cocci arranged in islands, or groups, scattered everywhere throughout the slides.

Urine examination showed a trace of albumin, acetone positive, indican excessive.

Here then, is a so-called mental case, with no discoverable history to account for the state of his mind; with no disease, but with a stasis of the bowel, an unusual grouping of cocci in the stained stool specimens; with toxic products in the urine; and evidence of a marked depression of the circulatory system.

All of these *physiological conditions* could have been discovered by the family physician and treated by him with the same result that we obtained in the Psychopathic Ward where this patient (and many like him) made an excellent recovery, when treated with liberal doses of salts, high irrigations of the bowel, and careful attention to diet and rest. When the physiological conditions were brought to normal, that physiological organ, the brain, responded and the mind became normal too.

There are many such cases admitted to this hospital, and mentally they look very much like dementia praecox cases, but repeated examinations of urine and stool show them to be varieties of toxemia. Such cases seen in the early stages of their mental states could often be treated by the general practitioner as outlined above, without recourse to the hospital for mental diseases. They are called by the French "Auto-intoxication et Delires" and the mental symptoms are properly delirium, not insanity.

Seymour DeWitt Ludlum, M.D.,
Visiting Chief, Psychopathic Department.

ABSTRACTS

By W. Minster Kunkel, M.D., Harrisburg, Pa.

From the Journal of Laboratory and Clinical Medicine

In the issue for October, 1923, Robertson and Boyd make a very valuable contribution to the study of burns. Previous studies have virtually established the later symptoms of burns as due to a toxemia of unknown origin. Various speculations and conclusions as to the nature of the toxin have been presented. Robertson and Boyd, using young anesthetized rabbits and guinea pigs and blood obtained from children suffering from burn toxemia have established many striking characteristics of this hypothetical toxin. As a result of their studies, they have made the following conclusions:

(1) Death within the first twenty-four hours is practically always due to primary shock; later than this, to toxic shock.

(2) There is a toxin produced in burned tissue, which circulates in the blood, apparently associated entirely with the red cells, and which causes the symptoms seen in bad superficial burns, and in some cases death.

(3) Extracts of burned skin are toxic. Extracts of skin burned postmortem are innocuous.

(4) There is increased protein catabolism in burns as evidenced by the increase in the nonprotein nitrogen and urea nitrogen of the blood.

(5) The contents of burn blisters are not toxic.

(6) Whole citrated blood from burn cases is toxic. The blood serum is not toxic. Solutions of corpuscles properly treated are more toxic than whole blood.

(7) The toxic substance consists of two portions, one of which is thermostabile, diffusible and neurotoxic; the other is thermolabile, colloidal and neurotoxic. Chemically the toxin consists of primary and secondary proteoses.

(8) No evidence of the production of antibodies against the burn toxin could be found.

The resemblance between this toxin and the toxin of snake venom is striking. There have been, from time to time, favorable results reported in the treatment of burn toxemia by the transfusion of compatible blood from cases recovering from toxemia. Whether these results are to be ascribed to the presence of an antitoxin, or to the mechanical replacement of normal blood for the toxic blood, should stimulate further effort; for the practical application of specific therapy in burn toxemia, heretofore treated entirely symptomatically, would be an advance in medical treatment comparable to the epoch-making introduction of insulin.

OFFICIAL STATEMENT ON MEDICAL LICENSURE SCANDAL

Executive Meeting of Board of Trustees Issues Public Announcement

At the meeting of the executive committee of the Board of Trustees held December 12, it was decided to issue a statement for the public on the position of the American Medical Association relative to the recent scandal in medical licensure. In accordance with this action, the committee has issued the following statement to the press:

For more than twenty years, the attention of the public has been regularly directed, in official publications of the Association, to the evils from which the present scandal arose. The existence of low grade medical schools which refused to raise their standards, which refused to permit inspection and which refused even to submit lists of their students has been regularly noted. The dangers of multiple licensing boards in certain states which issued permits to practice to men who could not qualify for or successfully pass the regular boards have also been made the subject of warning statements. Since 1918, *The Journal of the American Medical Association* has published annually the fact that the Connecticut and Arkansas eclectic licensing boards were apparently serving as clearing houses for low grade institutions in Missouri. In 1920, *The Journal* pointed out that Connecticut, through its eclectic board, was licensing men who had not studied in eclectic medical schools, and even worse, was licensing some men who apparently had not completed a medical course in any school. The American Medical Association is a body which has no punitive powers. It could not arrest and prosecute; it could only point out to state officials the festering evils which required their official attention. Nevertheless, public officials have consistently disregarded these announcements until the sensational publicity accorded an exposé by a St. Louis newspaper forced the matter on their attention.

The statement of a man under indictment in connection with diploma frauds in Missouri, that there are more than 25,000 physicians in the United States practicing with false credentials has been made the subject of numerous editorials, in which the medical profession has been urged to keep these impostors from deluding the public. At the headquarters of the American Medical Association is a card index which contains a card for every man licensed to practice medicine in the United States. Through this card index and through its records of the men who attend medical schools, the Association is able to say positively that the number of medical imposters and poorly qualified physicians does not even approximate 25,000. During the past eight years, not more than 2,500 men, who have been given diplomas by low grade medical schools, have received state licenses.

There are to-day five medical schools in the United States which are not up to the high standard of the remaining seventy-six. If these schools are forced to raise their requirements or else to discontinue, the public will be assured that no men will be graduated in medicine who are not qualified to appear for licensure. If the state licensing boards will then admit to their examinations only those who are qualified, the public will have assurance that any man who can present the license of the state examining board is a properly qualified physician. The existence of multiple licensing boards in certain states, which permit men not qualified for the regular board to pass certain special boards, is a constant menace. Finally, the public will not be safe from the medical imposter until the police power of the state is ever alert to search out and prosecute the man who is practicing medicine without a license.—*Jour. A. M. A.*, Dec. 22, 1923.

PROBLEMS IN THE CONTROL OF DIPHTHERIA

James A. Hayne, Columbia, S. C. (*Journal A. M. A.*, Dec. 22, 1923), states that in 1915 the per capita cost of the use of diphtheria antitoxin in South Carolina was 55 mills. In 1919, it was about 88 mills. The present cost is about 82 mills. South Carolina, in 1910, was the first state to furnish diphtheria antitoxin free to its citizens, black and white. In 1915 the average amount used was 12,000 units; in 1920, 32,000 units were used per case. This dropped in 1921 to 20,000 units, and in 1922 practically the same amount was used. The average death rate in 1920 in the registration area was over 16 per thousand, whereas in South Carolina the average death rate was about 13 per thousand. This is attributed largely to the free distribution of diphtheria antitoxin. Passive immunity is produced in all house contacts by the injection of a small dose, from 500 to 1,000 units, of antitoxin. In Charleston County, exclusive of the city of Charleston, 3,727 doses were given during the last fifteen months; 1,117 children under 10 years of age, received three full immunizing doses. Of these numbers, 107 (white children) were of pre-school age, ranging from 1 to 6. In addition to the foregoing, thirty-nine white and 120 colored children received two immunizing doses, as they failed to receive the full set for various reasons. In addition of these, twenty-eight white and thirty colored children received only one dose, as they failed to complete their series. No case of diphtheria has been discovered in any of the children that had these doses of toxin-antitoxin. Two deaths from diphtheria in Charleston County during the last year were among children whose parents refused to give their consent for the immunizing treatment. The immunizing treatment is offered through a circular letter addressed to the parent of each school child, and sent in care of the child. The immunizing treatments were given only to such children as had obtained the consent of their parents for the immunization. No preliminary Schick test was attempted on any of the children, nor was a follow-up Schick test done. The reactions following the administration of toxin-antitoxin were, as a rule, very mild. No evidence of anaphylaxis was noted. For the total state of South Carolina so far there have been 2,735 children inoculated. The incidence of diphtheria in South Carolina did not correspond with the opening of the schools. Hayne is of the opinion that diphtheria becomes epidemic only in years in which the rainfall is deficient, and that the epidemics are on a larger scale when three or more years of deficient rainfall follow one another. In South Carolina the incidence of diphtheria coincides with the drought that occurs usually in August and September, and when there is an unusual lack of precipitation there are many more cases of diphtheria. The distributing system for antitoxin consists of selected drug stores throughout all parts of the state. Every town of 500 inhabitants has one distributing station, and our cities and larger towns have more, in accordance with their population. Each station is supplied with an initial stock of diphtheria antitoxin in one, five, ten and twenty thousand unit sizes, a bound book of requisitions printed in triplicate, addressed envelopes for mailing requisitions for the supply depot in Columbia, and an instruction pamphlet. When the physician calls at a distributing station for diphtheria antitoxin, a triplicate requisition is made out, showing the number and size of the packages supplied, and the name, sex, age and color of the patient. Reports are compiled monthly, and each distributor is paid a commission on all diphtheria antitoxin distributed as compensation for his services.

NEUROTOLOGIC STUDIES IN EPILEPSY

The report made by Isaac H. Jones, Los Angeles (*Journal A. M. A.*, Dec. 22, 1923), is the outcome of examination of twenty-seven epileptic patients, entirely from the point of view of the ear, nose and throat. General and neurologic examination of each of these cases were made. No characteristic condition was discovered in the nose, nasopharynx, throat, teeth, mouth, external ear, middle ear or cochlea, nor was there any suggestion of intracranial auditory involvement. In contrast, vestibular impairment or abnormality was found in nearly all the cases. Of the twenty-seven, only three showed normal nystagmus, vertigo and past-pointing, and each of these three showed definite subnormality in constitutional responses to the vestibular tests. They failed to show the usual pallor, sweat and nausea found in the normal, after prolonged turning and douching. No conclusions are drawn. However, Jones says that the phenomena suggest that the fairly well known vestibular mechanism is connected with the unknown mechanism through which epileptic phenomena are produced.

MODERN AIDS TO CATARACT EXTRACTIONS

Paralyzing the orbicularis by the injection of procain before operating, in the opinion of George S. Derby, Boston (*Journal A. M. A.*, Dec. 22, 1923), constitutes one of the greatest advances in the technic of cataract extraction that has been developed in recent times. He analyzes the last 100 cases of cataract extraction done in his service. Seventy-two of these were done by himself. The results indicate that one can operate by this method in the ordinary case of cataract extraction with much greater security, while in the difficult case the chances of ultimate success are much greater. Dislocated lenses may be removed with a nominal loss of vitreous, or with none at all.

PROPAGANDA FOR REFORM

Bacillus Acidophilus Therapy.—A method for the preparation of Bacillus acidophilus milk has been published by Rettger and Cheplin (Arch. Int. Med. Vol. 29:357, (March, 1922). Microscopically, Bacillus acidophilus closely resembles the Bacillus bulgaricus, but cultural methods of distinction have been proposed. The therapeutic value of the various lactic acid ferment preparations is discussed in New and Nonofficial Remedies, 1923. While recent publications give evidence in favor of Bacillus acidophilus therapy, W. H. Morriss expresses the belief that whatever beneficial results occurred in the cases reported by him were due to some other factor than the actual transformation of the common intestinal bacteria into the acidophilus type of organism. (*Jour. A. M. A.*, Aug. 11, 1923, p. 494).

Tapeworm Remedies.—Oleoresin of aspidium and pelletierin tannate are the remedies of choice, the first being more popular. To give the remedies the best chance for action, the intestinal contents should be reduced as much as possible by restriction of solid food and evacuation before the treatment. On the morning of the treatment the patient should stay in bed and be given from 6 to 8 gm. of oleoresin of aspidium divided into as many capsules in the course of 10 to 15 minutes. Two hours later a saline cathartic should be administered and repeated every two hours until thorough evacuation has been secured. (*Jour. A. M. A.*, Aug. 11, 1923, p. 495).

COMMUNICATION

To the Editor of The Atlantic Medical Journal, *Harrisburg, Pa.*

Dear Sir: Will you kindly insert an advertisement in the Journal for a copy, in good condition, of the May, 1911, Pennsylvania Medical Journal, for which I shall be glad to pay fifty cents.

I wish it very much as I lack just that one number to complete a file which I expect to bind.

Thanking you, I remain,

Sincerely yours,
Mrs. C. L. Stevens,
114 So. Main St., Athens, Pa.

Dr. O. Pine queries: Why do you so frenziedly hurry from the hall after the great man has concluded, when only some obscure mortals are to speak following him? Did not the great one arise from obscurity? Very well, if you will not be fair to those who have reputations to earn, why waste any time pursuing these words proceeding from one of the "great obscure"?

Dr. O. Pine queries: Ever and anon have not you and I heard some brilliant medico advise closer relations with quacks, renegades, and the dubious, in the firm belief (sic) that kindness and association will insidiously produce miraculous reform? Weld brass to gold, and presto, is it all become gold? Why not, in the longing to make a sure and thorough conversion, turn over the government of the entire medical body to those who are so easily transformed from vice to virtue?

Dr. O. Pine queries: How do you feel when some one has almost the entire time of discussion consumed with fervid logorrhea of inconsequence, and you wish to speak briefly and importantly upon the subject engaging the attention of the meeting, but are choked off by the presence in the chair thundering, "Owing to the lateness of the hour, Dr. Reader will close the discussion"?

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February, 1924

EDITORIALS

NOW IS THE TIME TO MAKE YOUR INFLUENCE COUNT

Pennsylvania election primaries will occur in April of this year.

At the last meeting of the Legislature, certain measures were passed which were not to the best interest of the medical profession or of the public. Now, since the members of the Legislature will in April come before the public at the primaries, asking for support, it will be possible for the Doctors of Medicine in each district to throw their influence in favor of certain candidates. This furnishes an opportunity for the physician to exercise his right of selection of candidates, and he should vote only for such men as can be trusted to vote intelligently in the Legislature on matters concerning health measures in this state.

Would it not be wise for each county medical society to have its local candidates appear at an early meeting and state their position in this matter?

H. A. M.

TREATMENT OF PNEUMONIA

We are now in the season when pneumonia is increased in its frequency and severity. The old type of localized lobar pneumonia appears to be becoming more frequent as contrasted with the bilateral influenzal pneumonia which seemed to predominate following the epidemic of 1918.

Common sense rules should obtain in the treatment of patients ill with this disease, each patient being handled according to his own personal or peculiar idiosyncrasies. A continuous exchange of fresh air in the sick room is imperative. Some patients will tolerate outside atmospheric temperature while others, especially at the extremes of life, will do much better on fresh air that has been tempered by some heat.

The heroic vaccine and serum treatment that had been recommended during recent years has not established its value as a curative procedure; therefore it must be cautiously used, if at all, and then only in selected cases. Digitalis may be indicated in the majority of instances, especially in patients over thirty.

Insomnia must always be guarded against, using hypnotics or sedatives to overcome this if the patient has one sleepless night. The coal tar products should be used very cautiously.

Constipation is the rule in pneumonia. The bowels should be moved by enema after the second day, a slight laxative being permissible at the onset.

Tympanites constitutes one of the most deadly complications, and measures should be instituted to prevent the development of this dangerous condition. Pituitrin, adrenalin, eserin, strychnin and turpentine, all have their indications in the treatment of this complication.

As the disease is of short duration and most patients are fairly well nourished a full dietary is not necessary. The frequent administration of cooling drinks, especially fruit juices, is very acceptable to the patient.

Alcohol fulfills many indications in certain cases. In those previously addicted to its use it is very necessary.

Veratrum viride is useful in the early stage in equalizing pulmonary capillary pressure. Venesection does good in selected cases. Oxygen likewise has its indication for use but is seldom needed if the patient has an abundant supply of pure fresh air. Bathing for cleanliness and other toilet purposes is all that should be practiced in pneumonia, as the great burden carried by the heart is added to if the patient is disturbed frequently.

If acidosis should develop, 500 c.c. of a five per cent isotonic glucose and sodium bicarbonate solution may be administered intravenously.

Caution should be practiced in allowing the patient to resume physical exertion after the clinical symptoms have subsided. Subsidence of fever does not by any means represent complete repair of damage suffered during this severe affection. A too early return to activity may cause serious cardiac weakness. Unresolved pneumonia is a very rare entity. Empyema will explain the postpneumonic febrile movement in the majority of instances.

Regardless of our advances in the knowledge of the therapeutics in pneumonia the mortality will still continue to average close to 25%.

A. C. M.

MULTITUDE OF INNOVATIONS

The criteria for proving a certain agent the cause of a disease are well established. The stringency of Kock's postulates alone render them apparently fool-proof, nevertheless experiments must usually await corroboration by other workers before their conclusions are accepted as final. It is fitting and speaks well for medical science that such rigid requirements are laid down. Many have been the experiments that have fallen short of these postulates and ultimately been discarded.

Yet the enthusiasm of medical explorers continually leads them far afield. The great majority of the profession who are engrossed entirely in active work too often draw conclusions and carry into practice theories that fall far short of proof or even probability. This is a natural by-product of a science still in the process of growth. Obviously no such strict rules can be required of the general practitioner as guide the research worker. Nevertheless they should be approached much more closely than they are to-day. Too often generalities of physiology and pharmacology are made the basis of successful advertising of questionable proprietary products. Too often are heterogeneous bacteria thrown into a vaccine and used against a disease the cause of which is yet undiscovered. The benzol ring of salvarsan has been a prolific father but has begotten many black sheep. The basilic vein is overfed. The liver pours its bile too often into the duodenal tube while the gall-bladder looks on with a stony smile. Were there more intimate acquaintance with the normal flora of the tonsils, nasal passages and lymph glands, less often would innocent bacteria be made into vaccines. Were the normal course of disease, with its remissions, exacerbations and crises, more closely studied, less often would certain drugs enjoy the honors that nature earned.

The solution is no radical reaction against the evils that exist, but merely a more thorough knowledge of the fundamental medical sciences, and a little healthy skepticism toward the multitude of innovations.

W. M. K.

ENLARGED THYMUS AND ITS TREATMENT

Enlarged thymus often goes for a long time unrecognized, especially where the symptoms are not acute. The failure to recognize the condition may prolong a child's illness, or may lead to sudden death during a simple operation, such as tonsillotomy.

The classical symptoms are dyspnea, cyanosis, and an inspiratory stridor, but if one depends only upon this trio of symptoms many cases will go unrecognized. Benjamin says "The chief complaint is nearly always cough or attacks of choking, which come and go, appearing frequently in paroxysms." Often, while apparently well, the child begins to cough during the night. This is repeated at intervals, and the patient does not have the ordinary symptoms of a cold.

The following symptoms, while not characteristic, should suggest the advisability of an x-ray examination: Inability to cry loudly, crowing respiration when crying, noisy respiration or wheezing, noisy respiration during sleep, difficulty in nursing, throwing back the head, twitching, fretfulness, feeble respiration, grunting as though the child were having stool, slow or retarded development and failure of the child to gain in weight in spite of proper dietary measures.

There are physical signs of enlarged thymus well known to every pediatrician, but the diagnosis is usually made by an x-ray study. This must be done by instantaneous exposure, because most of the cases occur in very young children who cannot be made to hold still. Premature babies should be examined and all babies who have cyanosis or difficult respiration.

Once the diagnosis is made, the only satisfactory treatment is radiation, either with the x-rays or radium. With skillful application there is no danger and no harm has resulted. Great care must, of course, be observed by the attendants who are holding the child during treatment, on account of the high tension wires which may cause a severe shock or even death. The earlier the treatment is instituted the more satisfactory are the results. In a very young child a single x-ray treatment will often suffice to cure the patient. If no improvement results after three or four treatments with the x-rays, then the diagnosis is likely incorrect or there is some other condition which is keeping up the symptoms.

G. E. P.

MICROSCOPY OF THE LIVING EYE

The visit of Professor Allvar Gullstrand of Upsula, Sweden, to this country in 1922, when he read a paper on Diaphragm Lamps in Ophthalmology before an International Congress of Ophthalmology, was productive in arousing and stimulating renewed keen interest in slit lamp microscopy, first introduced by Professor Gullstrand in 1911, and the study of the living structure of the anterior segment of the eye. Recently there have been published a number of beautifully illustrated and well written articles, by various authors, on the cornea, iris, lens and anterior vitreous. These structures are now unfolded in a new light, and a complete change in our conception of the crystalline lens and the classification of cataracts has been necessitated by the knowledge gained from these methods of study.

Dr. L. Koeppe of Halle has eliminated the curve of the cornea by applying a contact glass to the eyeball, permitting the retina to be studied stereomicroscopically under high magnification. Attention to the posterior segment has received renewed interest following the studies by Professor A. Vogt of Zurich, and other investigators of red-free ophthalomoscopy, by means of which we can study the retina and nerve fibres which it was heretofore impossible to study, due to the intensity of the red color from the choroid pigment and vessels.

A perusal of the programs of the meetings of various organizations devoted to ophthalmology cannot help but impress us with the growing prominence of these special scientific methods of investigation.

G. H. C.

FOCI OF INFECTION IN THE HEAD

The examination of the mouth, throat and nasal sinuses for foci of infection is one of the most important duties of the physician. If properly done, great care and attention to detail must be used. A hasty, careless. or unintelligent examination may fail to disclose a focus which is causing anything from mild headaches and lack of energy, to completely disabling arthritis, or cardiovascular disease, or blindness. Hence it behooves the physician to cultivate the habit of studying intelligently the hygiene of the mouth, throat and nasal sinuses.

Of first importance is the use of a light which will give brilliant illumination and yet allow both hands free to manipulate the necessary instruments. This is obtained by the head mirror, the electric head light or the electric light attached to the tongue depressor. In examining the teeth, every tooth must be carefully inspected and the spaces between the teeth should be probed. Particles of food lodging between the teeth and undergoing putrefaction are frequently the cause of foul breath, lack of appetite, tiredness in the morning and even more disturbing secondary effects. Pressure should be made on the gums on all sides of the teeth. Such pressure will disclose the presence of pus under the edges of the gums. The possibility of infection about the roots of the teeth cannot be always decided by a simple x-ray. The x-rays should be taken and the films examined by men who have made a special study in this field; many apical infections have been missed because the x-rays were improperly taken or the films were examined by those not skilled in judging them.

The examination of the tonsils likewise demands thoroughness. The tongue depressor should be so manipulated that the throat is well exposed. With the free hand a wooden tongue blade or other blunt instrument should be pressed upon the anterior pillar, pushing the tonsil out and thus exposing it and squeezing out the crypts and the peritonsillar accumulations. The examination of the accessory nasal sinuses is difficult and the final decision as to whether or not infection is present must be made by an experienced specialist. An x-ray is not sufficient, as infection in the sinuses does not always cause a shadow; neither does transillumination disclose all cases of infection. Actual puncture and washing the sinus may be necessary before the diagnosis is finally made. Where the clinical symptoms point to infection of the accessory nasal sinuses, the physician should have the examination made by a specialist of the highest skill.

The determination of the oral hygiene is a most important duty of the physician. He should develop the habit of examining with punctilious and scrupulous thoroughness the teeth and tonsils. Food particles between the teeth should be probed for; the gums should be pressed on all sides; before excluding apical abscesses or infection, the x-rays should be taken and the films examined by one experienced in this particular work. The tonsils should be well exposed by pressure and the material extruded should be noted. Decision as to whether or not the accessory nasal sinuses are infected should be made by a specialist of experience and skill; negative x-rays and transillumination do not necessarily rule out infection.

R. R. S.

PIONEER PHYSICIANS OF PENNSYLVANIA

LANCASTER COUNTY

It is a disputed question as to who really was the first representative physician in Lancaster County. Evidence however seems to show that Dr. Hans Heinrich Neff was the first regular physician in the county. Two brothers, Francis and Hans, emigrated from Switzerland to Alsace and thence to America and settled near Lancaster. Among the descendants of Dr. Hans Neff, were Dr. Abraham Neff, Lancaster, 1758; Dr. Christian Neff, 1795; his nephew, Dr. Abraham Breneman, and Dr. Jno. K. Neff, Lancaster, 1843.

Dr. Edwin A. Atlee was born about 1778 and came to Lancaster about 1793 and lived with Dr. Edward Hand. General Edward Hand was born in Elzduff, Ireland, 1744, and died at his farm at Rockford, near Lancaster, in 1806. In 1767 he was appointed by George III, surgeon of the 18th Royal Irish Regiment of foot and sailed to America with his regiment and arrived in Philadelphia July 11, 1767. He resigned his commission in 1774 and came to Lancaster to practice. In 1775 he entered the continental service and left Lancaster as a lieutenant-colonel. He served with distinction and was discharged with the troops at Philadelphia after the battle of Yorktown. He was a member of the Continental Congress in 1784-1785.

Dr. Albert Dupresne was known as the "Swisser Doctor." He had two sons, both physicians—Dr. Alfred, who enjoyed rather a bad reputation, and Dr. Samuel, who was a fine physician and a man of fine character.

Dr. William Brown made a reputation as surgeon in charge of a hospital at Lititz, the "Brothers House," to which many sick and wounded soldiers were brought after the battle of the Brandywine. He compiled a small book for the use of his assistants, "A repertory of simple and efficacious prescriptions for the use of the Military hospital belonging to the army of the United States of America."

Among the founders of the Lancaster County Medical Society was Dr. Henry Carpenter. He was born in Lancaster December 10, 1819. He read medicine with Dr. Samuel Humes. He was an active physician and at the same time active in other fields. He was president of Select Council, a member of the Lancaster School Board, a director of many railroad enterprises. He was the first secretary of the Lancaster County Medical Society and its president in 1855, and was secretary and vice-president of the State Medical Society.

Robert M. Girvin, M.D., was born February 3, 1836, in Strasburg, Lancaster County, Pa. He was educated in the public schools and the Strasburg Academy, Lewisburg University and Millersville State Normal School. He graduated from Jefferson Medical College, 1822. He served as resident physician to the Philadelphia Hospital. He also served in a large military hospital. He began private practice in West Philadelphia and became at once greatly interested in the many charitable institutions of that portion of Philadelphia. He was instrumental in securing the site at Thirty-ninth and Powelton Avenue for the Presbyterian Alliance for hospital purposes. He later became gynecologist to the Presbyterian Hospital and resigned from the Philadelphia Hospital.

In the early history of medicine in Lancaster County three families of physicians stand out prominently—the Atlees, the Muhlenbergs, and the Mussers.

THE ATLEES

The first Atlee to practice medicine in Lancaster County was Dr. Edwin A Atlee, born about 1778. He was the youngest son of Hon. William Augustus Atlee and the uncle of Dr. John L. Atlee. He read medicine with Dr. Hand and began to practice in Middleton, and afterwards moved to Columbia. He graduated from the University of Pennsylvania in 1804. He returned to Columbia after his graduation, but removed to Philadelphia in 1806, where he enjoyed a successful practice for many years. He was especially successful as an obstetrician and was mentioned as the proper person to fill the chair of obstetrics at the University of Pennsylvania.

John Light Atlee, M.D., LL.D., was the son of Col. Wm. Pitt Atlee and Sarah Light, daughter of Major John Light. He was born in Lancaster, November 2, 1799. After his preliminary education he read medicine with Dr. Samuel Humes in 1815, and in April, 1820, was graduated from the University of Pennsylvania. He was one of the founders of the Lancaster City and County Medical Society and of the Medical Society of the State of Pennsylvania. He was Professor of Anatomy and Physiology at Franklin and Marshall College after the union of Franklin and Marshall Colleges. He was a celebrated surgeon whose reputation and skill were recognized all over the United States. Before the days of anesthetics or asepsis he was a daring surgeon and operator of judgment and fine technique. He revived the operation of ovariotomy in 1843 and was the first successfully to remove both ovaries at one operation. Dr. S. D. Gross of Philadelphia said of him, "As a physician and as a general surgeon, skilled in diagnosis, in the use of the knife, he has earned a wide and an enduring reputation and added luster to his native state and city as one of their most worthy and illustrious citizens." He had two sons who were physicians: Dr. Walter Franklin Atlee, who graduated from Yale and the University of Pennsylvania and who practiced in Philadelphia, and Dr. John Light Atlee, Jr., who also graduated from Yale and the University of Pennsylvania and practiced his profession in Lancaster and was an examining surgeon during the Civil War.

Another son, William Augustus, became a prominent member of the Lancaster Bar. He was the father of Dr. John L. Atlee, one of the most active of the medical profession in Lancaster County to-day.

Dr. Washington L. Atlee was a younger brother of John Light Atlee. He read medicine with his brother, later moving to Philadelphia, where he became an eminent physician and was at one time Professor of Medical Chemistry in Pennsylvania College.

THE MUHLENBERGS

Frederick Augustus Muhlenberg was born March 14, 1795, in Lancaster, where his father, the Rev. Dr. G. Henry E. Muhlenberg, was for thirty-five years pastor of the Evangelical Lutheran Church of the Holy Trinity. He was educated in private and parochial schools of Lancaster and entered the office of Dr. Benjamin Rush, of Philadelphia, as a student of medicine. He graduated from the University of Pennsylvania and returned to Lancaster and entered with zeal into the practice of his chosen profession. He became more skilled in medicine than in surgery and acquired great reputation as a diagnostician. He was also known as an educator and was a supporter of the interests of Franklin College and was active in the efforts that resulted in the removal of Marshall College to Lancaster and their union into Franklin and Marshall College.

Dr. Henry E. Muhlenberg was a native of Lancaster and a son of Frederick Augustus Muhlenberg. He studied medicine with his father and also with Dr. Benjamin Rush of Philadelphia. He also graduated from the University of Pennsylvania in 1838. He practiced with his father and enjoyed a large practice.

Dr. Henry E. Muhlenberg, Jr., was a son of Dr. Henry E. Muhlenberg and a grandson of Frederick Augustus Muhlenberg. He graduated at the University of Pennsylvania in 1871 and served as a surgeon in the United States Marine Service. He began private practice in Lancaster in 1877, and was for years Medical Director of St. Joseph Hospital.

Dr. Benjamin S. Muhlenberg was another son of Dr. F. A. Muhlenberg. After his graduation from the University of Pennsylvania in 1845 he was commissioned a surgeon in the army and served with the Second Regiment, Pennsylvania Volunteers. He was present at the taking of Vera Cruz. After resigning his commission he returned to Lancaster to practice and later became engaged in the drug business.

THE MUSSERS

Dr. John Musser lived at Turkey Hill and practiced there and in Lancaster. He died about 1820. He left two sons, Dr. Joseph Musser, who removed to Ohio, and Dr. Martin Musser, who settled in Lampeter and enjoyed a large practice. Three of the four sons of Dr. Martin Musser became physicians: Dr. Jacob Musser, Dr. F. M. Musser, and Dr. Benj. Musser. Dr. John H. Musser, who attained a national reputation, was a son of Dr. Benj. Musser. Henry Musser, the remaining son of Dr. Martin Musser, was a farmer but the father of two physicians, Dr. M. B. Musser, who moved to Philadelphia, and Dr. H. E. Musser, who practiced in West Lampeter Township.

Dr. J. Harry Musser, beloved and respected by all who remember him, a real doctor, kind, gentle, well read and an inspiration always to the young physician, was born in Lampeter Township, Lancaster County, Pa., January 5, 1845. His family was one of the oldest in Lancaster County, and on both sides has been prominent in the Mennonite Church. He graduated from Jefferson Medical College in 1886, and began to practice in his native town of Lampeter, where he remained active in his profession until stricken a few years before his death by a cerebral hemorrhage.

OTHER HONORED SONS

Descended from families prominently connected with the medical profession of Lancaster County, the following men, D. Hayes Agnew, Jno. H. Musser and Jno. B. Deaver, moved from Lancaster to Philadelphia and obtained prominence in the medical history of the United States.

D. Hayes Agnew, M.D., LL.D., was born in Sadsbury Township, Lancaster County, in 1820. His father, David H. Agnew, a physician of reputation in Lancaster County, was his medical preceptor. He graduated from the University of Pennsylvania and located in Lancaster County, and after practicing in his native county for a few years he moved to Philadelphia. It is hardly necessary to chronicle his advancement in the medical profession. He died one of the most widely known surgeons in the United States, and professor of surgery at the University of Pennsylvania, a beloved teacher and an inspiration to all who had the fortune to be his students.

Dr. John H. Musser was the son of Dr. Benjamin Musser, of Strasburg. He was educated at the Strasburg Academy, Millersville Normal School, studied with his father and graduated in medicine at the University of Pennsylvania in 1877. At the time of his death he was Professor of Clinical Medicine at his Alma Mater. A consultant and diagnostician of national reputation, he was always a great friend of all students attending the University from his native county of Lancaster.

Dr. Jno. B. Deaver of Philadelphia, beloved by every medical man from Lancaster County, be he an old doctor, a young practitioner or a student starting out on his course in medicine, is the son of Dr. John Deaver, who practiced at the Buck. We attempt to say nothing of Dr. Deaver's rise in the surgical world. He graduated from the University of Pennsylvania. He was a beloved teacher of many of the present physicians of the county. He is Chief Surgeon at the Lankenau Hospital in Philadelphia, where his clinics still are the greatest attraction to medical students in Philadelphia. He is a true son of Lancaster County with a warm spot in his heart for his native soil and for his fellow physicians, who rejoice in all the honor he has brought to the medical profession.

THE CASSIDYS

Dr. Alexander M. Cassidy and Dr. Patrick Cassidy, two brothers, both members of the Lancaster County Medical Society in 1844, were both born in Butler Co., Ohio. Dr. Alexander came to Lancaster about 1831. He was a surgeon in the Second Pennsylvania Volunteers during the Mexican War, and gained a reputation in Lancaster County as a good physician and skillful surgeon. Dr. Patrick Cassidy came to Lancaster in 1845. He graduated from Jefferson Medical College in 1848 and practiced medicine and surgery in Lancaster with great success. He died July 12, 1864. He had a tremendous influence for good as a director of the city schools and it has been said that "probably no man ever did more than Dr. Patrick Cassidy to foster a thorough education in Lancaster."

The Lancaster City and County Medical Society was organized following a meeting ordered for January 14, 1844, by Dr. Eli Parry. This, however, was not the first attempt to organize the profession into a society for mutual advantage. The physicians of Lancaster County made an attempt to effect such an organization as the following, taken from *The Intelligencer* of February 24, 1823, proves.

> "At a meeting of physicians in the borough of Strasburg on the 7th unit for the purpose of establishing a Medical Society in the county of Lancaster, Pa., Dr. Frances S. Burrowes was appointed chairman and Dr. William Forman secretary. On motion it was resolved, That we constitute an association to be called 'The Medical Society of the City and County of Lancaster,' whose object it shall be to promote harmony among the members of the profession and to improve medical science. Resolved, That Drs. Humes, Dinge, Riegy, Boulder, Handford, Davis and Forman be a committee to draft a constitution and by-laws for the government of the society, who shall report at the next meeting."

The Committee on Constitution and By-Laws did its work, but it never had a chance to report because the attempt to organize failed and no more meetings were held. Dr. John L. Atlee, in an address before the American Medical Association in Cleveland in 1883, expressed the reason for this failure when he said:

> "So great was the jealousy existing between them (speaking of the physicians of this period) that for more than twenty years after my graduation it was impossible to form a medical society in my native city and county because there were so many aspirants for the honors."

Those present at the first meeting called by Dr. Parry to effect an organization, January 14, 1844, were Drs. F. A. Muhlenberg, A. M. Cassidy, J. Leonard, H. Muhlenberg, J. L. Atlee, E. Landis, C. C. Cameron, P. Cassidy, E. Parry, H. Carpenter, S. Humes and W. L. Atlee. Dr. Samuel Humes was called to the chair and Dr. W. L. Atlee was made secretary. On motion of Dr. J. L. Atlee and Henry Carpenter it was resolved, "That it is expedient that a medical society, to be composed of the physicians of this city and county, be organized."

Charles P. Stahr, M.D.
139 East Walnut St., Lancaster, Pa.

Dr. O. Pine queries: Is there anything more admirable than your own stuff in print? Who will peruse it oftener and with more gusto than the author-reader?

Dr. O. Pine queries: Do you regret that you are not a great medical writer? Well, will you be so keen for being such, after reviewing the authors of twenty years ago, whose revised editions of recent years look like the brain children of other men assuming the same names? And what would many of the new authors of to-day do, if some unfortunate vision could depict to them the radical revisions of their scientific effusions a score of years from now?

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg., Pittsburgh, Pa.

PERIODIC PHYSICAL EXAMINATIONS

We recently discussed before a small group of medical practitioners the subject of periodic physical examinations of the apparently healthy, and took advantage of the opportunity to present the record blank designed by the Public Relations Committee of our State Society. The reaction of the members present to the history form and examination technique outlined in the blank was most favorable. A small percentage of the men discussing the subject stated that they had already turned down overtures from some of their patients for health examinations because they did not have an outline to follow. These men welcomed the blank of the Committee on Public Relations. Others present stated that they were in perfect sympathy with the movement but did not feel it incumbent upon them to solicit from their patients the opportunity for such examinations. All present agreed that the blank was worthy of all possible ethical support and that in many instances the making and keeping of such records might become the inspiration for more comprehensive history-taking in office consultations.

The blanks as they appeared in the January number of the Atlantic Medical Journal may be had through the office of the Editor of the Journal, 230 State St., Harrisburg, Pa., in pads of 100 for 65c per pad.

CANDIDATES FOR THE 1924 HONOR ROLL

On January 21, 1924, this office had received the annual assessment of 1,216 members; on the same day, 1923, of 1,082 members; on the same day, 1922, of 850 members; 1921, of 1,152 members.

The percentage of 1923 dues received at this office, January 21st, from certain county medical societies is herewith indicated; Wyoming, 100%; Adams, 91%; Juniata, 91%; Montgomery, 78%; Columbia, 72%; Clarion, 58%; Clinton, 58%; Washington, 58%; Delaware, 56%; Lycoming, 51%; Wayne, 51%; Bradford, 50%; Elk, 50%; Montour, 50%; Union, 50%.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to January 18:

Adams: *New Member*—Maurice S. Weaver, 111 Baltimore St., Gettysburg.

Allegheny: *New Members*—Joseph E. Bloom, 3700 Forbes St.; Thomas W. Cook, 1376 Lincoln Ave.; Linfred L. Cooper, 1155 Liberty Ave.; Charles Davison, 2037 Center Ave., James W. Esler, E. 10th St., (Tarentum); Ralph H. Dunlap, 81 N. Euclid Ave. (Bellevue); Glenn D. Dunmire, 7218 Idlewild St.; Raymond A. D. Gillis, Highland Bldg.; Bernhard A. Goldman, Atwood & Forbes St.; Ruth I. Morrisson Hauser, 6723 McPherson St.; Martin C. Johns, Parnassus; Richard W. Lang, St. Francis Hospital; John R. McCurdy, St. Francis Hospital; Solomon Mann, 1854 Center Ave.; Eugene F. Meschter, 401 N. Euclid Ave.; Harry M. Ray, South Side Hospital; Jacob O. Spechter, 1537 Center Ave.; Hugh S. Wallace, 17 Center Ave. (Ingram); Morris B. Weber, 5437 Jackson St., Pittsburgh. *Removal*—William T. Hall from Bellefonte (Center Co.) to 835 Maywood St, Hammond, Ind.; John A. Lichty from Pittsburgh, to Clifton Springs, New York; James E. Rush from New York City to 18 Walnut St., Crafton (Pgh., Pa.). *Dead*—Ira W. Chapman of Pittsburgh (Univ. of Pittsburgh '04), Nov. 23, aged 47; James M. Barr of Pittsburgh (Univ. of Pittsburgh '08), from pulmonary hemorrhage, Dec. 28, aged 41.

Armstrong: *New Members*—A. Victor Ohlson, Rural Valley; Frank W. Corson, Templeton. *Removal*—Thomas H. Newcome from Templeton to Box 126, Seaford, Del.

Berks: *Removal*—Max M. Teplitz from State Sanatorium, Hamburg, to Hartford, Conn. *Resignation*—Willard H. Spear, Reading.

Cambria: *Death*—Harry Somerville of Chest Springs (Cinn. Coll. of Med. & Surg. '88), recently, aged 55.

Clearfield: *Removal*—Homer H. Lewis from Surveyor to Penfield.

Clinton: *Reinstated Member*—Reuben H. Meek, Avis.

Columbia: *Reinstated Members*—Jacob R. Brobst, Bloomsburg; Roland F. Wear, Berwick.

Crawford: *Transfer*—Clyde F. Smith, Central City, to Somerset County Society.

Delaware: *New Members*—Isadore L. Biely, 2131 W. Third St., Chester; Franklin E. Chamberlin, 24 Logan Ave., Glenolden.

Elk: *Removal*—N. M. Daghir from Byrnedale to Weedville. *Transfer*—Maurice T. Leary, Meadville, to Crawford County Society.

Erie: *New Members*—Garner P. Spaulding, Albion; Benjamin Goldman, 156 W. Eighth St.; Felix W. Shubert, 802 E. 22d St., Erie. *Death*—Arthur F. Davis of North East (Coll. of Phys. & Surg., Boston, '00), from apoplexy, recently, aged 53.

Huntingdon: *New Member*—John H. Hennemuth, Robertsdale.

Juniata: *New Member*—Robert P. Banks, Mifflintown.

Lawrence: *New Member*—Walter J. Harshberger, Hillsville, *Death*—James K. Pollock of New Castle (Miami Med. Coll., Cincinnati, '73), from apoplexy, Jan. 2, aged 79.

Lehigh: *Death*—William H. Hartzell of Allentown (Jeff. Med. Coll. '73) Dec. 6, aged 72.

Lackawanna: *New Members*—Robert M. Toll, 318 Mulberry St.; William J. McHugh, 1514 Luzerne St., Scranton.

Luzerne: *New Member*—Albert H. Gabriel, Plymouth. *Reinstated Members*—Charles E. Moore, Alden Station; Isaiah C. Morgan, Nanticoke. *Death*—W. Clive Smith of Wilkes-Barre (Univ. of Penna. '93) Dec. 11, aged 55.

Lycoming: *New Member*—William H. Rote, 3 E. Third St., Williamsport. *Deaths*—Ferdinand S. Nevling of Clearfield (Baltimore Med. Coll. '83) Dec. 21, aged 76. Joseph L. Derr of Salladasburg (Univ. of Md. '89) Dec. 25, aged 57.

Montgomery: *Death*—J. R. Vincent Wolfe of Norristown (Jeff. Med. Coll. '11), Nov. 17, aged 42.

Philadelphia: *New Members*—Harry Walsh, 6701 Lansdowne Ave.; James C. Small, 4422 Chestnut St.; Philadelphia. *Reinstated Member*—Warren H. Johnston, 1413 S. 58th St., Philadelphia. *Removal*—B. Franklin Royer from Halifax, N. S., to 11 Wyoming Ave., Tunkhannock (Wyoming Co.). *Deaths*—Leo H. Bernd (Univ. of Penna. '98) Jan. 2, aged 49. Charles M. Burk (Univ. of Penna. '91), Dec. 28, aged 59.

Schuylkill: *New Members*—Michael J. McCarthy, Pottsville; George S. Marburger, New Ringgold; Edward Cook, Shenandoah; J. Russell Sweeney, Tamaqua.

Washington: *Reinstated Member*—Harry F. Bailey, Monongahela. *Removal*—Charles B. Wood from Monongahela to Gen. Del., St. Petersburg, Fla.

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since December 15th. Figures in first column indicate county society numbers; second column, State Society numbers.

1923				
Dec. 20	Luzerne	240	7332	$5.00
Jan. 2	Washington	122	7333	5.00
	Luzerne	241	7334	5.00
	Lackawanna	236-237	7335-7336	5.00
8	Philadelphia	1989-1991	7337-7339	12.50
12	Columbia	41-42	7340-7341	10.00
1924				
Dec. 18	Clarion	1-10	29-38	50.00
20	Mifflin	1-6	39-44	30.00
	Lycoming	3-21	45-63	95.00
24	Lehigh	1-6	64-69	30.00
	Adams	1-17	70-86	85.00
	Somerset	1-3	87-89	15.00
1924				
Dec. 27	Montour	1-8	90-97	40.00
	Wyoming	1-3	98-100	15.00
	Montgomery	1-14	101-114	70.00
29	Wyoming	4-9	115-120	30.00
	Mifflin	7	121	5.00
31	Juniata	1-3	122-124	15.00
	Clinton	1-11	125-135	55.00
Jan. 2	Washington	1-40	136-175	200.00
	Juniata	4	176	5.00
	Bradford	1-20	177-196	100.00
3	Somerset	4-6	197-199	15.00
4	Juniata	5-8	200-203	20.00
	Blair	1-27	204-230	135.00
	Montgomery	15-54	231-270	200.00
	Northumberland	1-7	271-277	35.00
	Moutour	9-10	278-279	10.00
7	Clinton	12	280	5.00
8	Huntingdon	1-13	281-293	65.00
	Bradford	21-22	294-295	10.00
	Butler	3-5	296-298	15.00
	Delaware	1-27	299-325	135.00
10	Bucks	16-25	326-335	50.00
	Butler	7-13	336-342	35.00
	Juniata	9	343	5.00
	Wyoming	10-12	344-346	15.00
	Wayne	7-14	347-354	40.00
	Allegheny	1-267	355-621	1,335.00
	Somerset	7	622	5.00
	Crawford	1-7	623-629	35.00
	Montgomery	55-76	630-651	110.00
11	Adams	18-20	652-654	15.00
	Montour	11	655	5.00
	Venango	1	656	5.00
	Union	1-7	657-663	35.00
	Cumberland	1-12	664-675	60.00
12	Schuylkill	1-61	676-736	305.00
	Delaware	28-45	737-754	90.00
	Elk	1-12	755-766	60.00
	Columbia	1-29	767-795	145.00
15	Lycoming	22-58	796-832	185.00
	Bradford	23-24	833-834	10.00
	Clarion	11-18	835-842	40.00
16	Delaware	46-50	843-847	25.00
	Cambria	1-31	848-878	155.00
	Armstrong	1-15	879-893	75.00
	Erie	1-8	894-901	40.00
	Venango	2	902	5.00
	Adams	21	903	5.00
	Somerset	8-10	904-906	15.00
17	Center	1-10	907-916	50.00
	Montour	12	917	5.00
	Venango	3-4	918-919	10.00
	Mercer	1-3	920-922	15.00
	Union	8	923	5.00
	Juniata	10	924	5.00
	Washington	41-68	925-952	140.00

FREDERICK L. VAN SICKLE, M.D.,
Executive Secretary,
230 State St., Harrisburg, Pa.

PHYSICAL EXAMINATIONS FOR LIFE INSURANCE

In the experience of the average general practitioner, life insurance examinations enter into his work as his location and opportunities afford. A great many practitioners, especially those residing in cities and the larger towns, have the experience of being examiners for life insurance companies some time or other in their lives. The practical value of this experience is that it better prepares the physician in examining the apparently well, and it is not only beneficial from a financial point of view, but it increases the opportunity of evaluating the normal anatomical and physiological condition of the applicants.

It is true that specialists who are following certain branches of medicine and surgery, do not care for life insurance examination work. It is also true that the physician practicing entirely in a rural community may not have an opportunity to do much life insurance examining.

We have arrived at a time when the physical examination of the apparently well individual is becoming more and more an important phase in the practice of medicine, especially as it relates to preventive medicine. We are calling the attention of the profession to this matter largely through a desire to increase the interest that should be aroused to-day due to the fact that various organizations are requiring annual physical examinations, and many industries are requiring their employees to undergo an annual or semi-annual physical examination. Therefore, it behooves the profession to meet more than half-way the trend of the times, as it relates to the discovery of incipient disease, thereby aiding its clientele to keep well by meeting the dangers of disease before they have assumed any proportions. Our State Society has accomplished a great deal in the past few years, but nothing of so great importance to the public as the work which has been done through the Committee on Public Relations, viz., the urging of the physical examination of the apparently well.

In the January issue of the Atlantic Medical Journal was printed the form which has been adopted by that Committee for the purpose of making these examinations. In a letter sent to the secretaries of the component county medical societies of the State, Dr. Walter F. Donaldson, Secretary of the State Society, has called attention to these blanks and suggests that these examinations may be conducted with simple office armamentarium, viz., weight scales, chronometer, clinical thermometer, sphygmomanometer, tape measure, stethoscope, spot light, tongue depressor, nasal and ear specula, eye test chart, flesh pencil, rubber gloves, test tube, urinometer and litmus paper. To these might be added more specific apparatus should any individual require the same. These examinations should be made at a time during the day when the physician has the most leisure. They should not be hurried and they should be thorough, especially the first examination.

It should be noted that the history blank is to be made out by the individual being examined, but this should be carefully read by the examiner so that the personal history may be most complete.

It will only be a few years until the public will welcome this plan of annual or semi-annual physical examination when they have learned to appreciate its value. Can you not understand the chagrin of a man, especially a business man, who seeks life insurance and finds that he is rejected for some physical defect of which he was not aware? Had he had a periodic examination made by a family physician or a competent medical examiner this would have been avoided, because frequently there are conditions which will clear up under proper treatment and render the person capable of passing a perfect examination, thus enabling him to obtain life insurance.

This work which has been undertaken is not for the present only; it is to be continued as long as medicine is practiced, because we believe that people are becoming more and more of the opinion that if medical service is of value, it is of more value in keeping a person physically well and in not having to pay later for medical and surgical service in cases of extreme illness.

We appeal to the members of the profession to make use of this means of winning the favorable opinion of the people of this Commonwealth by assisting not only themselves but the medical profession in this missionary work of making physical examinations of the apparently well.

INSULIN IN DIABETIC COMA COMPLICATING PREGNANCY

William S. Reveno, Detroit (*Journal A. M. A.*, Dec. 22, 1923), reports a case of diabetes in which a well advanced pregnancy had to be reckoned with along with the coma. Recovery followed on the use of insulin. However, parturition marked the turning point in the progress of this case to a successful termination.

LEFT SUPERIOR CERVICAL SYMPATHECTOMY UNDER LOCAL ANESTHESIA IN ANGINA PECTORIS

In the case reported on by Jay Harvey Bacon, Peoria, Ill. (*Journal A. M. A.*, Dec. 22, 1923), there has been effected a complete relief from all severe symptoms. The results have justified the means used in this case, and Bacon regards the operation as a justifiable procedure in those severe cases of angina pectoris that do not respond to rest and diet and the administration of nitrites. The incision over the anterior border of the sternocleidomastoid muscle gives a quick easy approach, and it may be safely attempted under local anesthesia when the condition of the patient will not justify the use of a general anesthesia.

AN EXPERIMENTAL STUDY OF MULTIPLE SCLEROSIS

The alleged spirochetal origin of disseminated sclerosis was studied by Joseph Collins and Hideyo Noguchi, New York (*Journal A. M. A.*, Dec. 22, 1923), in eight cases. The negative results obtained indicate that the demonstration of *Spirochaeta argentinesis* and the experimental reproduction of multiple sclerosis in guinea-pigs and rabbits are difficult.

COUNTY MEDICAL SOCIETIES

REPORTERS OF COUNTY SOCIETIES

Adams—James P. Dalhey, M.D., Gettysburg.
Allegheny—Lester Hollander, M.D., Pittsburgh.
Armstrong—Jay B. F. Wyant, M.D., Kittanning.
Beaver—Francis H. McCaskey, M.D., Rochester.
Bedford—N. A. Timmons, M.D., Bedford.
Berks—Clara Shetter-Keiser, M.D., Reading.
Blair—James S. Taylor, M.D., Altoona.
Bradford—Stanley D. Conklin, M.D., Sayre.
Bucks—Anthony F. Myers, M.D., Blooming Glen.
Butler—L. Leo Doane, M.D., Butler.
Cambria—Joseph J. Meyer, M.D., Johnstown.
Carbon—Jacob A. Trexler, M.D., Lehighton.
Center—James L. Seihert, M.D., Bellefonte.
Chester—Henry Pleasants, Jr., M.D., West Chester.
Clarion—H. A. Wick, M.D., New Bethlehem.
Clearfield—W. E. Reiley, M.D., Clearfield.
Clinton—Clair B. Kirk, M.D., Mill Hall.
Columbia—C. B. Yost, M.D., Bloomsburg.
Crawford—Cornelius C. Laffer, M.D., Meadville.
Cumberland—Calvin R. Rickenhaugh, M.D., Carlisle.
Dauphin—W. Minster Kunkel, M.D., Harrisburg.
Delaware—George L. Armitage, M.D., Chester.
Elk—Joseph E. Madara, M.D., St. Marys.
Erie—Anna M. Schrade, M.D., Erie.
Fayette—Hugh Ralston, M.D., Uniontown.
Franklin—Samuel D. Shull, M.D., Chambersburg.
Greene—Thomas B. Hill, M D., Waynesburg.
Huntingdon—John M. Keichline, Jr., M.D., Huntingdon.
Indiana—H. Boydston Smith, M.D., Blairsville.
Jefferson—W. A. Hill, M.D., Reynoldsville.
Juniata—W. H. Banks, M.D., Mifflintown.
Lackawanna—G. A. Clark, M.D., Scranton.
Lancaster—J. Sullivan, M.D., Lancaster.
Lawrence—William A. Womer, M.D., New Castle.
Lebanon—W. Horace Means, M.D., Lebanon.
Lehigh—Harold E. Hersh, M.D., Allentown.
Luzerne—H Irvin Evans, M.D., Ashley.
Lycoming—Wesley F. Kunkle, M.D., Williamsport.
McKean—Francis DeCaria, M.D., Bradford.
Mercer—M. Edith MacBride, M.D., Sharon.
Mifflin—F. A. Rupp, M.D., Lewistown.
Monroe—Charles S. Flagler, M.D., Stroudsburg.
Montgomery—John C. Simpson, M.D., Norristown.
Montour—John H. Sandel, M.D., Danville.
Northampton—Wm. A. Finady, M.D., Bethlehem.
Northumberland—Charles H. Swenk, M.D., Sunbury.
Perry—A. R. Johnson, M.D., New Bloomfield.
Philadelphia—Franklin M. Crispin, Philadelphia.
Potter—Ross H. Jones, M.D., Coudersport.
Schuylkill—Arthur B. Fleming, M.D., Tamaqua.
Snyder—John O. Wagner, M.D., Beaver Springs.
Somerset—H. Clay McKinley, M.D., Meyersdale.
Sullivan—P. G. Biddle, M.D., Dushore.
Susquehanna—Robert B. Mackey, M.D., Montrose.
Tioga—H. A. Voshurg, M.D., Arnot.
Union—Oliver W. H. Glover, M.D., Laurelton.
Venango—John F. Davis, M.D., Oil City.
Warren—M. V. Ball, M.D., Warren.
Washington—Charles C. Cracraft, M.D., Claysville.
Wayne—Hugh Stevenson, III, M.D., Honesdale.
Westmoreland—D. Allison Walker, M.D., South West.
Wyoming—Herbert L. McKown, M.D., Tunkhannock.
York—Maurice C. Wentz, M.D., York.

FEBRUARY, 1924

COUNTY SOCIETY REPORTS

IN THE JANUARY NUMBER OF THE ATLANTIC MEDICAL JOURNAL A DEPARTMENT OF EXCHANGE FOR PHYSICIANS DESIRING LOCATIONS AND COMMUNITIES NEEDING MEDICAL SERVICE WAS ESTABLISHED. THE ASSISTANCE OF THE OFFICERS AND MEMBERS OF COMPONENT COUNTY MEDICAL SOCIETIES IS SOLICITED TO MAKE THIS DEPARTMENT SUCCESSFUL.

ALLEGHENY—JANUARY

The regular scientific meeting, of the Allegheny County Medical Society was held in the auditorium of the Pittsburgh Free Dispensary, 43 Fernando Street, at 8:45 p.m., Tuesday, December 18, 1923. The meeting was called to order by the president, Dr. Ernest W. Willetts. Attendance, 232.

Dr. T. W. Grayson, read the following report for the necrology committee: On the evening of November 23rd Dr. Ira W. Chapman died at his home in East End, Pittsburgh. He was born 47 years ago in Rootstown, Ohio, and finished his education at the School of Medicine of the University of Pittsburgh, where he graduated in 1904. Since then he has practiced in this city. Dr. Chapman's mother still resides in Rootstown; two sisters live in Cleveland, and a brother in Chicago.

Dr. J. K. Musgrave presented a paper entitled "The Choice of Anesthetic," which was discussed by Drs. J. Wade Elphinstone, G. C. Weil, George J. Stimson, J. R. McCurdy and J. I. Johnston.

Dr. L. C. Beinhauer read a paper entitled "Skin Reactions From Salvarsan," in which he stated that every arsenical (salvarsan) preparation has been, at one time or another, responsible for some type of skin reaction. A short review of the reactions before the salvarsan era was given. No direct attempt was made to classify the reactions, which are merely an expression of "arsenic dermatitis." However, Stuhmer's classification was quoted: (1) Acute vasotoxic arsphenamin dermatitis, including all reactions within the first 48 hours; (2) Subacute, anaphylactic arsphenamin dermatitis appearing in 6 to 12 days post-inunction—to so-called "oxid reaction," due to body oxidation of the drug; (3) arsphenamine dermatitis, including all late or delayed reactions from 4 to 6 weeks after the initial injection to 2 to 4 weeks after the completion of the course. A detailed description of the following skin reactions was given, namely: dermatitis, exfoliation, herxheimer, lichenoid, urticarial and edematous, icteric, purpuric, fixed reactions, herpetic, keratotic, pigmented. Of those named, the exfoliation, purpuric and icteric are most serious, often fatal. No attempt is made to give theories of reactions, cause, factor or treatment of the same. Accompanying the description is a tabulated chart of the different reactions according to type, frequency, onset, symptoms, skin appearance, duration, complication and prognosis. This paper was discussed by Drs. Lester Hollander and L. C. Beinhauer in closing.

Dr. John A. Hawkins' paper, entitled "Prostatic Obstruction" was discussed by Drs. R. L. Anderson, H. E. McGuire, J. A. Ruben, and J. A. Hawkins in closing.

Dr. C. L. Palmer, presented a paper entitled "Observations on Blood Stream Infections." These observations included 15 positive cases as proved by positive blood cultures. Conclusions: Typhoid case died; pneumonia case died; staphylococcus case died, probably the result of malignancy of pleura and spinal cord; streptococcus viridans, five died; streptococcus hemolyticus, three died. White cell count ranged as follows: pneumonia, 18,000; streptococcus unclassified, 5,000 to 9,000. staphylococcus, 13,000 to 29,000; streptococcus hemolyticus, 11,000 to 12,000; streptococcus viridans, 5,000 to 12,000. As a rule leucocytosis is not pronounced. In some of the cases several blood cultures had to be taken before a positive culture was obtained. Therefore one negative blood culture in a suspected case is not sufficient. None of the streptococcus viridans cases with heart murmur (the bacterial or malignant endocarditis cases) recovered. The bacterial endocarditis cases are not as a rule very toxic till the terminal stage of their illness. In these cases surprise can be looked for—almost any variety of pathological changes in any part of the body with accompanying focal symptoms. The course of these cases and the prognosis are very unsatisfactory and uncertain, according to reports. The freshly prepared sodium cacodylate intravenously in ascending doses is about the most reliable treatment at the present time. Dr. Palmer's paper was discussed by Drs. Moses Baker, J. Slater Crawford and C. L. Palmer in closing.

Dr. Lawrence Litchfield's paper entitled "Birth Control" was discussed by Drs. P. J. Eaton, Theodore Diller, J. W. MacFarlane, A. P. D'Zmura, H. C. Westervelt, C. F. Lauer, James L. Foster, H. H. Sullivan, H. A. Shaw, W. T. Hall, Paul Titus and Lawrence Litchfield in closing.

Adjournment at 11:05 p. m.

Lester Hollander, M.D., Reporter.

BERKS—JANUARY

Dr. Donald Guthrie, of Sayre, read a paper on "Cardinal Symptoms of Duodenal Ulcer," an abstract of which follows:

In reviewing the history of over 500 cases of duodenal ulcer we found the following facts to be true. It is a disease more common in men than in women. Seventy-eight per cent of our cases were in men, while the average duration of symptoms was 12 years. Chronic ulcer of the stomach has a definite symptomatology, especially when situated in the pyloric end of the stomach or in the duodenum, which lessens as the lesion recedes toward the cardia.

For years the periods of attack and periods of freedom from symptoms alternate. Early in the history the appetite remains good and nutrition does not fail, while food relieves all symptoms, which return in from 1 to 4 hours after the meal. This relief of the symptoms by food and the regular return is characteristic and prevails until gastric function is interfered with by complications. After many attacks the type of symptoms is less definite, and may be such as are common to all forms of dyspeptic types of trouble—gall-bladder, appendicitis and cancer. The difference consists in the time the symptoms appear, their ready control by food, vomiting, irrigation, etc. Later the symptoms change; food may increase the distress instead of giving ease, and the periods of relief may fail.

The early history will lead to a correct diagnosis. Description of attacks long forgotten by the patient can be ascertained, and it is most important to give these cases careful study and careful physical examination. The x-ray in proper hands is a most important aid in the diagnosis, but the history and the physical examination come first and the x-ray second in importance. The same may be said of the test meal examination, the greatest value of which is to determine the motive power of the stomach. Let me urge a better effort on the part of all of us in careful history-taking and careful physical examination.

In opening the discussion of Dr. Guthrie's paper, Dr. William Bertolet stated that with most careful work there is still much fog. Pathology of the gall-bladder, pancreas and appendix makes the diagnosis difficult. He wanted to know how ulcers begin and how they ever heal, and said that all possible means should be used to cure before operating.

In continuing the discussion, Dr. C. H. Shearer said that one should be careful in opening an abdomen which has been opened before, also in a patient suffering from anemia.

In closing, Dr. Guthrie said gastro-enterostomy is the preferred operation; afterwards the ulcer often disappears. Clara Shetter-Keiser, M.D., Reporter.

DAUPHIN—JANUARY

The regular monthly meeting of the Dauphin County Medical Society was held Friday, January 4, 1924, at which meeting the newly elected president, Dr. G. L. Laverty, assumed his new duties and the retiring president, Dr. C. M. Rickert made his farewell address, presenting the very interesting paper which follows:

Proctology—A Neglected Field

Proctology, a field so long neglected and in the hands of itinerants and charlatans, has of late years advanced to such an extent that regular medical practitioners have, to a large degree, had to have suitable training in the general examination and treatment of the more important diseased rectal conditions.

Some authors claim that 80% of the people of middle age have, or have had, hemorrhoids or some disease of the lower bowel. I was, therefore, surprised to find, on writing to some of the largest and best medical schools, that in some no time is given to the special study of rectal diseases. In several others, only for a limited time during the senior year is there any pretense at a serious study of the diseases in this field. I venture to say that very few graduates of any of our medical schools are able properly to examine or diagnose even the more common diseases of the rectum and lower bowel, and it seems to me that most of the regular practitioners care very little for this kind of a practice.

When we remember that there are no diseases so annoying and painful, and at the same time producing such dire results on the general system, directly and reflexly, the importance of a thorough examination cannot be overestimated. Here, perhaps more than in any other portion of the body, are diseases liable to progress more rapidly, and carelessness and errors in diagnosis are apt to result in a simple condition developing into one of great magnitude.

In constitutional and self-limited diseases, a delay of a day or two seldom results in any injury to the patient; but in progressive diseases such as are commonly found in the rectum and lower bowel, a short delay may result in untold suffering and discomfort to the patient.

I remember a case of an ordinary thrombotic hemorrhoid, which several physicians failed to recognize. An abscess formed, bursting into the rectum and ending in a blind internal fistula. This latter condition caused untold suffering to the patient. I am sure that if the condition had been properly diagnosed and treated, all of this trouble could have been avoided. In most of the diseases that we find in the rectum, an early diagnosis and proper treatment of the conditions usually results in a rapid cure. Should there be an incipient malignant condition, only by an early diagnosis and treatment have we any hope of doing any good.

When a patient consults a doctor about a rectal condition, the subjective symptoms are likely referable to a number of pathological conditions. However great the symptoms may be, and however perfectly described, no diagnosis should be made and no treatment prescribed until a thorough examination has been made, irrespective of this history.

The main reasons a thorough examination is not made are the embarrassment to the patient and the disagreeable task for the physician; but these should never be sufficient excuse for omitting an examination.

A large part of the symptoms are likely to be reflex, and should be appreciated as such by the doctor. Unless you keep this in mind, you will likely treat the patient for a condition quite different from the rectal one.

When a patient consults the doctor about a rectal disease in most cases he has himself made a diagnosis of piles, and too often the doctor takes this diagnosis for granted and prescribes a suppository or an ointment. I have come across striking examples of this method on numerous occasions, but I recall one case especially. This man came from a distant city. He had consulted two physicians in his home city and several in Harrisburg before consulting me. This trouble had gone on for four days and all the while he was suffering severe pain. Every one of the physicians consulted prescribed an ointment, and not one suggested an examination. I examined the condition and found a large thrombotic pile. I excised the mass and in less than ten minutes the severe pain had left him. In this case I am sure an abscess would have resulted, with more trouble to follow. This patient was well-to-do, and complained to me about the seeming lack of interest and the utterly perfunctory and haphazard methods of the physicians he had consulted, and more so as he felt he was amply able to pay for their services.

Take another seemingly trivial condition for which patients often seek relief, viz., "itching piles." How few doctors will consider the condition serious enough to warrant an examination, and will simply prescribe an ointment. Excluding all discoverable local causes whereby the existence of pruritus may be explained, such as piles, ulcer, fistula and worms, and taking the disease unalloyed in its pure and simple state, to promise the patient that he can be easily and quickly cured would be more than anyone with experience would venture to do. Pruritus ani has a peculiar characteristic of behaving badly at night as soon as the patient has gotten warm in bed, at which time the annoyance is further increased by a moisture or exudation about the anus. Anyone who has seen with what anguish these unhappy victims battle through sleepless nights until the whole system is affected and the patient a nervous wreck, will agree that some consideration should be shown and an examination made.

In conclusion, let me repeat that the importance of local examination of diseases of the anus and rectum cannot be overestimated and that carelessness or error in diagnosis are bound to entail a great amount of useless suffering. Several days' delay may be the cause of disastrous results.

I should suggest, when the doctor is called upon for help for any rectal condition, that he take time to do several of the following things in his examination:

1. Get a careful history. It is imperative in most of the cases, and I usually let the patient have ample time to give it. Oftentimes this is a lengthy and tedious job, but it pays in that you in this way gain the patient's confidence, which usually means much in the management and treatment of the case later.

2. Be sure to find out about the state of the bowels, whether normal, loose or constipated, and the contents of the stool as to quantity, solid matter, mucus or blood.

3. Pain is a usual symptom, and often greatly exaggerated in proportion to the conditions present. Determine whether the pain is before, at the time of, or after defecation. Keep in mind that the pain may be reflex, simulating an altogether different condition.

4. Look for a prolapse or protusion during defecation. I have had a number of cases in which the sphincters were so stretched and relaxed that the mass of piles was likely to protrude upon the slightest exertion.

5. Spasm of the sphincters: I have had a number of patients that told me that the stool came so far and stopped; that the anus was so tightly closed that they could have a stool only with the greatest effort. This means usually a fissure and, by the constant teasing, the sphincters becoming hypertrophied and spasmodic. Once in a while a mass of internal piles will occlude the passage.

6. Most of the things learned above are from the patient. Next, and not the least important, is a thorough physical examination. Inspection and a digital examination will usually enable you to diagnose the condition, but not until you use a good speculum with proper light will you be able to confirm your diagnosis.

If every graduate in medicine would be taught to make a thorough examination of the rectum, and then every physician in active practice would make it a rule to examine every case that comes for help, the charlatans and quacks would have less people to humbug. W. Minster Kunkel, M.D., Reporter.

DELAWARE—JANUARY

The January meeting of the Delaware County Medical Society, was held in the Masonic Temple, Chester, on January 10, 1924. Dr. J. Clinton Starbuck, the president, called the meeting to order at 3:30 p.m. Attendance 40.

The following list was presented by the nominating committee, all having been elected by a unanimous vote: President, S. P. Gray, Chester; 1st vice president, A. V. B. Orr, Chester; 2nd vice president, G. B. Sickel, Chester; secretary-treasurer, W. E. Egbert, Chester; librarian, F. W. Nyemetz, Chester; reporter, G. L. Armitage, Chester; censors, H. C. Donahoo, Chester; Katharine Ulrich, Chester; H. Fronfield, Media.

Dr. Turnbull of the State Department of Health, gave an interesting talk on "Diphtheria Prevention." Dr. Turnbull stressed the value of the Schick test, for the determination of diphtheria immunes, both as a preliminary to the use of the toxin-antitoxin mixture, and as a check, after its use, to determine the need of further injections. He was of the opinion that this follow-up Schick test, was even more important than the preliminary one, and the most neglected part of the whole procedure. He stated that most children were immunized by three weekly injections of toxin-antitoxin, but a few needed another course of injections to complete their immunization. A follow-up Schick test will determine which children need the second course of injections, and prevent the failures which give the procedure a "black eye" to the laity.

The doctor asked coöperation from the profession for the campaigns that the State Health Department is staging, to stamp out diphtheria, by immunization of school and pre-school children, with the toxin-antitoxin. Dr. Turnbull closed by describing in detail the modus operandi of the Schick test, and the use of toxin-antitoxin.

Dr. Turnbull was elected an honorary member of the Delaware County Medical Society, by a unanimous vote.

Just before the close of the meeting, Dr. J. Clinton Starbuck, the retiring president, turned over the gavel to Dr. S. P. Gray, the new president.

After the scientific meeting, the society was entertained at dinner, in the Masonic Grill, as guests of Dr. Starbuck.

George L. Armitage, M.D., Reporter.

ERIE—JANUARY

The Erie County Medical Society met January 8th at the Central High School for the annual election of officers. Dr. William B. Washabaugh was elected president for 1924; Dr. J. B. Howe, vice-president; second vice-president, Dr. Frank McCarthy; secretary, Dr. R. S. Minerd; treasurer, Dr. F. B. Krimmel; reporter, Dr. Anna M. Schrade; librarian, Dr. Ford Eastman; censors, Dr. O. N. Chaffee, Dr. Chester McCallum, Dr. John O'Donnell.

The retiring president, Dr. Elmer G. Weibel, termed his address "A Medical Medley." He spoke briefly on a number of different subjects most interestingly. Speaking of heredity and our lack of knowledge of the principles governing it, he predicted that in the near future there would be a field opening up in medicine which would be of the greatest value in taking family histories and of great interest when it is once worked out. The taking of family histories would not then be the fruitless task it is now considered by many.

Dr. Weibel said his attention was first attracted to Mendel's Principles of Heredity by reading poultry journals. He found that the poultry fancier could do almost anything he wished with his flock by proper selection and breeding and could accurately judge as to whether certain characteristics would be present in the progeny, also how many of each kind he would have. These principles are well understood by scientific breeders. If we could apply these laws to the human race, we could at last realize a "super-race." Of course, we fully appreciate the many difficulties and obstacles, but these latter have been overcome in other fields of science. We must admit that certain characteristics in the human race are handed down from generation to generation. These need not necessarily appear in the parents of the individual, but where it is possible to trace the ancestry it will often be found they are inherited from more or less remote forbears.

Mice are very susceptible to carcinoma. This is not only true of mice, but of all animals who attain a sufficient age. For instance, carcinoma of the stomach is common in chickens; very much more common if the chickens are kept until they are older than they are when ordinarily killed. The reason why we do not find more carcinoma in animals is that their natural span of life is terminated prematurely.

If mice are kept under the most hygienic conditions so as to prolong their life to the utmost, the percentage of carcinoma increases rapidly with age.

Again if a strain of mice are bred from carcinoma-free mice, or free as far back as can be ascertained, the progeny do not seem to develop carcinoma even if they do attain an older age; while on the other hand if a strain is bred from mice with a carcinomatous ancestry, carcinoma seems sure to develop.

If the appearance or nonappearance of carcinoma in mice can be shown to come under the Mendelian law it could no doubt be applied to the human race, and possibly the incidence of this dread scourge be controlled.

Anna M. Schrade, M.D., Reporter.

LEHIGH—JANUARY

The Annual Meeting of the Lehigh County Medical Society was held January 8, 1924, at the Nurses College, Allentown Hospital, 2:30 p. m. No program had been arranged for, and after the reading of correspondence and reports of various committees, the officers for this year were elected and installed, after which adjournment was in order.

The annual banquet was held the same evening at the Hotel Allen, where a large number of members of the Society and their wives made their appearance to satisfy an extraordinary appetite, as the banquet committee had promised something worth while. Amidst good fellowship and music the various courses were eagerly devoured and some looked for more. This was followed by dancing and card playing.

The banquet is also the time for the retiring president to deliver his speech. This was capably taken care of by Dr. Frederick A. Fetherolf, who in glowing words told the Society (as some members have been to few meetings) what had been accomplished during his term of office. It was a masterly discourse and full of good ideas. Our newly elected president, Dr. Thomas H. Weaber, then took the floor and in a short address outlined his course for this year, saying in particular that he expected to continue the policy of Dr. Fetherolf. Our worthy secretary, Dr. J. T. Butz, was presented with a fountain pen and pencil for his untiring efforts always to better the work of this Society.

After the orchestra had played "Home, Sweet Home" there was a scramble around the cloak room, and the new year had started for Lehigh County Medical Society.

May the feeling of good fellowship so prominent at this banquet be continued throughout this year and make it one of the best for every one. Lehigh County sends its greetings to all societies at this time, the beginning of a new year.

Harold E. Hersh, M.D., Reporter.

LUZERNE—DECEMBER-JANUARY

The regular meeting of the Society was held in the Medical Building on December 20, 1923, and was called to order by President Schappert at 8:40 p. m.

The name of Dr. Albert H. Gabriel of Plymouth, Pa., was balloted on and he was elected a member of the Society.

Dr. Gibby presented resolutions on the death of Dr. A. T. McClintock.

Dr. J. Alan Corson, essayist of the evening, read a very interesting and instructive paper on "Differential Diagnosis of Cholecystitis and Cholelithiasis." The paper was discussed by Drs. Stewart, Long, Baker, Croop, Mayock and Mengel.

The January meeting of the Society was held in the Society Building on January 3, 1924, at 8:30 p. m.

Dr. Francis T. O'Donnell was the essayist for the evening and presented a very important subject, "Prescription Writing," which was very interestedly received by the various members of the Society.

The fortieth annual dinner of the Society was held at the Westmoreland Club, Wilkes-Barre, on Wednesday evening, January 16, 1924, at 6:30 p. m.

Dr. N. L. Schappert, the retiring president of the Society, filled the position of toastmaster in a capable manner. The speakers of the evening were Dr. W. L. Clark, Philadelphia; Dr. Lewis Edwards, Kingston; Dr. John J. Dailey, McAdoo, and Dr. Leo Mundy, Wilkes-Barre. Oppenheim's Orchestra furnished the music. The banquet committee, consisting of Dr. E. L. Meyers, Chairman, Dr. Grover Bixby and Dr. Trapold, Jr., received excellent praise for the fine menu and program which they arranged.

H. Irvin Evans, M.D., Reporter.

PHILADELPHIA

December 12th

At this meeting Dr. George E. Vincent, President of the Rockefeller Foundation, New York, addressed the Society on "An Adventure in Public Health." He spoke on the League of Nations—of Central and South America, to banish yellow fever.

In outlining the history of yellow fever Dr. Vincent mentioned pictures found in the ruins of old Mexican cities showing clinical symptoms of this disease, and cited how, in the modern period, vessels had been deserted in Havana harbor, and in Haiti a whole French army had been wiped out. In the Spanish War we had more to fear from yellow fever than from our chivalrous enemies, and that expedition became a sanitary rather than a military one, with Walter Reed and his corps in the field. After fruitlessly incubating rags and blankets the men themselves were exposed to mosquitoes in an effort to establish the etiology, which took a courage far greater than that inspired by the exhilaration of a mob spirit. The data obtained were then applied and enforced by the army under General Gorgas, and unjust as it may seem martially to compel people to conform to hygienic regulations, in a short time Havana and Cuba were cleaned up. This was imitated in Vera Cruz, and a campaign was begun in Rio de Janeiro.

A survey made by General Gorgas in 1916 showed yellow fever foci to be Yucatan, part of the Venezuela coast, Ecuador, northern Brazil and part of the western coast of Africa. In 1918 the International Health Board of the Rockefeller Foundation began a crusade on yellow fever by organizing yellow fever commissions composed of natives with one American agent in each, in Central America, Venezuela and Ecuador.

For accurate diagnosis and a therapeutic vaccine it was necessary to discover the germ of this disease, and Noguchi was dispatched to South America "equipped with guinea pigs, a lot of monkeys and one American." After much persuasion, a female stegomyia was persuaded to bite the carefully shaved and prepared back of a guinea pig, etc., etc., and a spiral organism was discovered which seemed to be the causative agent. Vaccines and sera were made and tried with success.

In 1918 Conner was sent to Ecuador. He persuaded the press to remain uncritical for three months, he organized his staff from the residents, he educated them, he educated the public, and he was granted the right to pass municipal ordinances, which in that region are observed. He made a spot map to show up the specially infested areas, and decided on birth control for the mosquito. All tanks had to be screened within 10 days at the owner's expense, barrels were topped, and the hole in the top screened, and after much experimentation a fish was found of such character as to devour the mosquito voraciously, yet to remain contentedly within the open vessels. In November, 1918 (when he arrived), there were 81 cases; in December, 88; in January, 78; in February, 37; in March, 13; in April, 2; in May, 2, and there have been no cases of yellow fever in that district since May, 1918.

There have been no cases in Central America in the past year, none in Mexico for 6 months, and no cases have recurred in Ecuador, Peru or Venezuela. In the one remaining region of this hemisphere, on the east cost of Brazil, the government has undertaken a complete campaign, and England, Portugal and Belgium are watching the west coast of Africa.

The secret of the success of this great work lay in the organization of nations, in the obtaining of scientific information, and in team play. Dr. Vincent closed with a plea for international coöperation for public health.

January 9th

The President, Dr. F. Hurst Maier, in the chair.

Dr. Eugene F. Du Bois (Russell Sage Institute of Pathology), by invitation: "Basal Metabolism and its Practical Application in the Diagnosis and Treatment of Thyroid Disease."—Basal metabolism, or better, "standard metabolism," since even at rest the activity of the organs and cells renders it not minimal, is the total heat production of an individual at complete rest, twelve to fourteen hours after the last meal.

Thyroid secretion is a slow steady regulator, acting as a draught on cell oxidation. The adrenal effect is more evanescent, and might be likened to the bellows. The body surface area is used as a basis for standards, as it is proportionate to the protoplasmic mass, the blood volume, and other vital factors. Ten to fifteen per cent difference from the average is not pathological, and there may even be in the same individual a fluctuation of 2 to 5%. Clinics differ in their reports of the effect of menstruation upon metabolism, but in many women, certainly, the catamenia has no effect.

Most of the machines on the market today are adequate, whether the heat production is measured by the oxygen consumption as in the closed circuit apparatus, or as in the respiration calorimeter by the CO_2 output and oxygen consumption. Errors of 5 to 10% occur as a result of faulty management of the patient, and minimum pulse, respirations and blood pressure must be obtained.

The basal metabolism is increased in hyperthyroidism, in the leukemias (in direct proportion to the increase of white blood cells), in nephritis, asthma, anemias, hypertension, acromegaly, and some types of cardiac disease. In any of these the rate may run as high as 40%. The simple colloid goiter case shows a normal metabolic rate. Adenomas may develop symptoms of hyperthyroidism, often without exophthalmus, especially when the patient is over 30 years, and their removal may reduce the metabolic rate to normal. Exophthalmic goiter shows rates higher than the toxic adenomata, reported by Magnus Levy as high as 70%, and the moderately severe cases running between 20 and 50%. The heart and central nervous system may have received permanent damage, and the exophthalmus persists in cases of cured hyperthyroidism. In doubtful cases, showing symptoms of both a hypo and hyperthyroidism, the basal metabolism test is impersonal, and forms a most helpful adjunct to a careful history and physical examination. Fifteen per cent above or below the average indicates a thyroid dysfunction unless there is another demonstrable cause.

Hyperthyroidism shows a tendency to spontaneous recovery, and rest in bed and mental rest often cause a fall of 10 to 20% in the metabolism in a few days, complete recovery occurring in a few months. X-ray and radium bring about recovery and return to the normal basal metabolism in two-thirds of the cases (ambulatory patients), and Lugol's solution (I 5%, KI 10%) in dosage of 10 to 15 m. per day gives great promise, especially in preoperative treatment. The operative method is the standard treatment, and primary ligation is often good. A very high or a rising basal metabolism is a bad surgical risk. In the treatment of hypothyroidism in adults (—40%) the basal metabolism tests aid in adjusting the dose of thyroxin or thyroid extract, but in cretinism the age of the patient makes the activity hard to control, and the disease has usually progressed too far for cure with thyroid extract. The general principles of metabolism should be studied before relying upon it for aid.

Dr. Chas. H. Frazier: "The Surgical Aspect of Goiter."—Dr. Frazier began his paper by saying that the thyroid is a gland of greatest interest to internist, pathologist, surgeon and roentgenologist. In preparing this paper he used the last 115 consecutive operations on cases of toxic goiter.

The toxic adenomata require longer and more careful treatment, because of the frequent cardiac complications, than exophthalmic goiter. In all doubtful cases the basal metabolism test is employed, and this, together with other evidences of toxicity, aids in judging the operative procedure, whether a preliminary ligation or a primary subtotal thyroidectomy. In 70% of those with basal metabolism not above 40%, the gland is removed without the preliminary operation.

The x-ray has been shown to be beneficial, at least for a time, in exophthalmic cases, but has not been tried in the toxic adenomata. These latter cases, when showing evidence of cardiac disease, contra-indicate the use of the x-ray, as the necessary six months of treatment allows for too great deterioration.

Statistics from goiter clinics show that the surgical treatment is best. Risks must be reduced as much as possible, with possibility of a persistent thymus or other condition not in the thyroid, eliminated. In cases with cardiac decompensation, showing dyspnea, fibrillation, edema or arrhythmia, rest and digitan are used before operation. The treatment of any heart lesion before operation is essential, and frequently electrocardiograms by a competent consultant are very helpful. The Mayo Clinic reports a mortality of 1.5% of the toxic goiters and 3.05% of the toxic adenomata. Crile groups them together, with a mortality of 1.1%. In Dr. Frazier's series of 115 there have been no fatalities. Eternal vigilance before and after the operation must be practiced. In cases of bad risk the fractional method is employed, boiling water injections being used in 3% of cases, ligation of poles in 35%, before the final subtotal thyroidectomy.

Improvement follows ligation in 40% of cases, probably due to the fact that the toxic drainage is stopped and the cervical sympathetic cut off.

Too much preoperative information to the patient is not good. Iodin, as Lugol's solution, is given both preoperatively and between the ligation and ultimate thyroidectomy, with better final result, and symptoms of relapse have been arrested in the Mayo Clinic by the administration of Lugol's solution.

In a series of autopsies on cases of exophthalmic goiter 80% showed a persistent thymus. X-ray should therefore be used in these cases, and two weeks of radiation should precede the operation if a thymus is found.

The basal metabolism test and the anesthetic are given in the same room and by the same person. In the toxic adenomata there is enough improvement after primary ligation to justify this step, and where the enlargement is unilateral, ligation of the pole on the affected side only is sufficient. The pole is bisected and the vessels ligated since by this method one can be sure to overlook nothing. It is seldom necessary to ligate the inferior pole; 40% improve after the superior pole has been tied off.

As to the technic, there is danger of leaving too much rather than too little tissue. Both recurrent laryngeal nerves can be damaged, especially when a hemostat is applied at the inner aspect of the lobe, or when the mesial dissection goes below the level of the larynx. Transfusion by the citrate method should be employed when there is the least doubt, since this is often the turning factor in the outcome of the case. In working with thyroid cases attention to every detail is essential.

Discussion was opened by Dr. Donald Guthrie, of the Robert Packer Hospital, Sayre, Pa., who began by outlining the rapid advancement in the understanding of toxic goiter and its surgical management. He believes in the use of anoci-association and gives his patients a good night's sleep and breakfast before operation. He finds the preoperative use of Lugol's solution very beneficial, and in the postoperative treatment of toxic adenomata it is good also. He mentioned the marked improvement which frequently occurs after double ligation, and closed by saying that the psychology of the sick goiter patient is a problem that must be met with the greatest sympathy and care.

Dr. Leon Jonas told of the construction of the first basal metabolism apparatus used in the William Pepper Laboratory and commended the work of Dr. Du Bois on thyroid, kidney and heart disease, which work has placed basal metabolism on a definite basis. He stressed the fact that the basal metabolism test requires the closest coöperation from the patient.

Dr. Mueller believes that the effect of ligation is gained through cutting out the vicious circle created by the sympathetic nerves, and sections show that there is very little histologic change in the cells of the thyroid after polar ligation. In toxic adenomata he does not agree with Dr. Frazier that ligation is indicated, since in these cases there is very little involvement of the cervical sympathetics and the effect of ligation uopn the blood supply is not great, due to the rich anastamoses. Bilateral subtotal thyroidectomy is much better than the old resection. The adolescent thyroids are merely a reaction to the menstrual epoch or circulation and should not be operated.

Dr. Babcock expressed appreciation of the remarkable absence of mortality in Dr. Frazier's cases. In toxic cases, where the problem is to wipe out the toxic element before the ultimate operation, he has found it beneficial first to expose the gland and thoroughly inject it with 50% quinin and urea, followed by absolute alcohol. The gland may then be removed in four or five days without reaction.

In closing, Dr. Du Bois mentioned the tendency in many of these cases to spontaneous recovery and said that for this reason medical men did not view ligation as the surgeons do.

MARY A. HIPPLE, M.D., Reporter.

WAYNE—DECEMBER

The December meeting of the Wayne County Medical Society was held at Honesdale December 20, 1923, when dinner was served at the Hotel Allen.

Election of officers for 1924 resulted as follows:

President, Frank I. Smith, Shohola; vice-presidents, Louis B. Nielsen, Honesdale and P. B. Peterson, Honesdale; secretary-treasurer, Hugh Stevenson, III, Waymart; district censor, Arno C. Voight, Hawley; county censors, Wm. H. Tassell, White Mills, Wm. T. McConville, Honesdale, and Fred W. Powell, Honesdale; Committee on Public Policy and Legislation, Edward W. Burns, Honesdale, and Harry B. Ely, Honesdale.

Dr. Wm. V. Sarine, of Carbondale, presented and read a paper on "The Value of the X-Ray in Gastro-Intestinal Diseases." This paper was well read, and was discussed by the members of the Society.

Dr. H. B. Ely, of Honesdale, presented a picture of a case of spina bifida, and also discussed a case of hydatidiform mole.

Drs. Edward and S. A. Bang, of South Canaan, have left for Vienna to study. They have the best wishes of the Society in the further pursuance of their medical knowledge. They expect to return in the spring.

The attention of members to payment of dues for 1924 is imperative. Please keep in good standing by so doing.

Hugh Stevenson, III, M.D., Secretary-Treasurer.

PENNSYLVANIA NEWS ITEMS

DEATHS

Mrs. F. T. Cavill, wife of Dr. F. T. Cavill, of Jessup, Lackawanna County, died at her home on January 10th.

Dr. Arthur F. Davis, of North East, died recently, aged 54 years. Dr. Davis was a graduate of the College of Physicians and Surgeons, Boston, Mass., class of 1900.

Dr. James K. Pollock, of New Castle, died on January 2d at his home. Dr. Pollock was born in 1845 and was graduated from the Miami Medical College, Cincinnati, Ohio, in 1873.

Dr. Henry Leaman, of Leaman Place, aged 85 years, died on December 19th. He was graduated from the Jefferson Medical College of Philadelphia in 1864 and was a Civil War veteran.

Dr. Joseph A. Gallagher, of Pittsburgh, who was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1901, died on November 29th, aged 49 years.

Dr. Charles M. Burk, of Philadelphia, who was graduated from the University of Pennsylvania School of Medicine in 1891, died at his home in Elkins Park on December 28, 1923, aged 58 years.

Dr. Roscoe Textor Kline, who was born in 1891 and was graduated from the University of Pittsburgh School of Medicine in 1917, died of pneumonia on January 12th at his home in Pittsburgh.

Dr. A. Lincoln Feltwell, a retired physician of Altoona, died on December 24, 1923, following a long illness. He was a graduate of Jefferson Medical College of Philadelphia, class of 1887.

Dr. Michael Ambrose Carroll, of Scranton, aged 57 years, died on November 30, 1923, following a long illness. Dr. Carroll was graduated from the College of Physicians and Surgeons, Baltimore, Md., in 1889.

Dr. A. E. Leaman, of West Willow, aged 60 years, died on December 20, 1923, after an illness of eleven months. Dr. Leamon was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1893.

Dr. James Metheny Barr, of Pittsburgh, who was graduated from the Medical School of the University of Pittsburgh in 1908, died of tuberculosis on December 28, 1923, at the age of 40 years. Dr. Barr was an examiner for the U. S. Veterans' Bureau.

Dr. Lewis Leonidas Rogers, of Kingston, who was for many years lecturer on hygiene in Wyoming Seminary, died on December 21, 1923, of pneumonia, aged 71 years. Dr. Rogers was a graduate of Jefferson Medical College of Philadelphia, class of 1881.

Dr. Sanford L. Underwood, of Pittston, who was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1893, and was on the staff of the Pittston Hospital, died on December 17th, 1923, following a long illness. He was 53 years old.

Dr. David W. W. Follweiler, of Lynnport, one of the oldest practicing physicians in Pennsylvania, was found dead on his farm recently. He recently passed his 82nd year, and death was due to apoplexy. Dr. Follweiler was graduated from Bellevue Hospital Medical College, New York, in 1870.

Dr. Joseph L. Derr, died at his home in Salladasburg on Christmas day after an illness of about a year. Dr. Derr was born in 1866 and was graduated from the University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, in 1889. He is survived by his widow, one son and one daughter.

Dr. Frank C. Katherman, of Whitney, a former president of the Westmoreland County Medical Society, died on January 23d from heart trouble superinduced by a gassing received in France, where he served as a captain of the medical corps of the Rainbow Division. Dr. Katherman was born in 1876 and was graduated from the Jefferson Medical College of Philadelphia in 1901.

Dr. W. Wellington Woodward, of West Chester, aged 44 years, died at his home on January 14th after a week's illness due to blood-poisoning caused by an infection he received after he had cut his finger through a rubber glove while performing an operation. He later developed pneumonia, which was the direct cause of his death. Dr. Woodward was a graduate of Haverford College and received his medical degree from the University of Pennsylvania School of Medicine in 1885.

After performing a difficult major operation, Dr. Empson H. Bainbridge, of Philadelphia, died on Monday night, January 21st, in his private hospital, 1423 Poplar Street, from cerebral hemorrhage. He died twelve hours after being taken ill, without regaining consciousness. Dr. Bainbridge, who was 49 years old, was a graduate of the University of Pennsylvania School of Medicine, class of 1901, and in 1905 was graduated from the Medico-Chirurgical College of Philadelphia. He is survived by a widow.

Dr. Ferdinand S. Nevling, a member of the Clearfield County Medical Society for many years, died at his home in Clearfield on December 21, 1923, following an illness of several years. At the time of his death Dr. Nevling was 76 years old. He entered the Civil War as a messenger boy at the age of fifteen and continued to serve as a private until the end of the war. He was graduated from Baltimore Medical College in 1883, after which he practiced at Karthaus for 25 years, moving to Clearfield in 1896. Dr. Nevling was married three times and is survived by his widow, two daughters and one son, Dr. A. B. Nevling, a practicing physician of Punxsutawney.

Dr. William Harvey Hartzell, for 45 years a practicing physician of Allentown, died on January 6th followed an attack of apoplexy suffered on the evening of the 3rd. Dr. Hartzell was born in 1851 and was graduated from Jefferson Medical College of Philadelphia in 1873. He was president of the State Society in 1904. He was also one of the organizers of the Allentown Hospital and served as its chief of staff for many years. Since 1894 he was a member of the board of trustees of the State Hospital at Norristown;

and was surgeon to the Lehigh Valley Traction Company and a member of the Allentown Board of Health. He also helped to organize the Citizens' Trust Company and served as its president for several years. Dr. Hartzell is survived by his widow and four sons.

DR. LEO H. BERND, of Philadelphia, died suddenly of a heart attack on January 2d while playing handball with two other physicians under the Franklin Field stadium at the University of Pennsylvania. Dr. Bernd was 48 years old. He was born in Macon, Georgia. After graduating from the Middle Georgia Military College, he entered the University of Pennsylvania School of Medicine and completed his medical education there in 1898. Thereafter he studied in Berlin, Vienna and London. For ten years he was clinical professor of surgery in the Woman's Medical College of Pennsylvania. Dr. Bernd was one of the first Philadelphia physicians to enter the medical corps at the opening of the war. He served in eight major engagements with American troops and was surg on to the Sixth engineers when they were on the British front. After the war he was elected president of the Third Division Association. He also was commander of the Harry Ingersoll Post No. 174, American L gion.

MARRIAGES

DR. JOSEPH V. BURNS and MISS ANNA MCDYER, both of Coaldale, were united in marriage on January 2nd.

DR. GUY L. CRIST, a former intern at the Harrisburg Hospital, and MISS CATHERINE RISHEL, a graduate of the Harrisburg Hospital Training School were married New Year's Day at Williamsport.

ITEMS

ON JANUARY 1ST, the new nurses' home was dedicated with appropriate services at the Harrisburg Hospital.

DR. AND MRS. ROBERT MCG. HURSH, of Harrisburg, have announced the birth of a son, Joseph LeCompte Hursh, January 1, 1924.

DR. C. C. RUSH, of Johnstown, was elected a member of the American Academy of Ophthalmology and Otolaryngology at its last meeting held in Washington recently.

DR. JOSEPH SCATTERGOOD, of West Chester, has been appointed Health Inspector for Bucks, Montgomery, Chester and Delaware Counties, by the Secretary of Health, Dr. Charles H. Miner.

UNDER THE AUSPICES of the Lackawanna County Medical Society, Dr. Eugene Pool, Chief Surgeon at the New York Hospital, held a surgical clinic at the State Hospital, Scranton, on Tuesday afternoon, January 15th.

DR. F. A. SHERRER of 32 N. Third Street, Easton, announces to the profession that owing to his illness, he has associated with himself Dr. Alfred S. Doyle, of Philadelphia. Their practice will be limited to radiology.

THE LUZERNE COUNTY MEDICAL SOCIETY has organized a Branch Society with headquarters in Hazleton. The following officers were elected for the present year: President, Dr. M. H. Kudlich; vice-president, Dr. J. C. Kochzynski; and secretary-treasurer, Dr. O. C. Reiche.

THE ANNUAL BANQUET of the Medical Alumni Association of the Medico-Chirurgical College was held at the Rittenhouse Hotel, Philadelphia, on November 22, 1923. Two hundred and twenty members enjoyed a very lively program. Dr. Francis J. Dever, of Bethlehem, was elected President.

DR. JESSIE W. PRYOR, for three years medical director of the Woman's Medical College Hospital, of Philadelphia, retired from that post on January 1, to enter private practice. She was succeeded by Dr. Margaret N. Dassell, instructor in Roentgenology at the College, and director of the X-Ray Department of the Hospital.

DR. RICHARD SLEE, of Swiftwater, has received a provisional appointment as District State Health Officer, and has been assigned to Nassau, Suffolk and Rockland Counties, New York, during Dr. Overton's leave of absence. Dr. Slee was formerly assistant Bacteriologist and Medical Inspector of the Pennsylvania State Health Department.

DR. ORLANDO H. PETTY, of Philadelphia, has been appointed Professor of Diseases of Metabolism in the Graduate School of Medicine of the University of Pennsylvania. Dr. Petty was also recently appointed by the director of Public Health of Philadelphia as physician in charge of the Department of Metabolism of the Philadelphia General Hospital.

IT HAS BEEN DISCOVERED that Mrs. Muriel Fernandez, who came to the town of Shenandoah about eight months ago from Panama, is suffering from leprosy. The woman's husband runs a boarding house for laborers in one of the most densely populated sections of Shenandoah. As soon as discovered the case was reported to the State Department of Health.

MAJOR FRANK C. ROBBINS, head of the U. S. Veterans' Hospital, at Perryville, Maryland, has accepted the position as superintendent of the Norristown State Hospital, having taken up his new duties about January 1st. During the War Major Robbins had charge of hospitals for mental diseases in France and Germany and he stands high in the government service.

THE THIRTY-SEVENTH ANNUAL BANQUET of the Association of the Ex-Resident and Resident Physicians of the Philadelphia General Hospital was held in the nurses' dining room of the Hospital on the evening of December 4, 1923. One hundred and twenty-five ex-internes and fifty-six of the active interne staff were in attendance.

Dr. George Henry Fox, 1869, noted dermatologist of New York City, gave a delightful reminiscent talk. J. P. Gaffney, Esq., the new City Solicitor of Philadelphia, made a speech endorsing the hospital administration and promising support in carrying out the comprehensive plans for the extension of the Hospital. Dr. Jos. C. Doane, Medical Director, welcomed the guests. Dr. E. J. G. Beardsley was toastmaster.

Dr. S. McC. Hamill was elected President and Dr. George Wilson, secretary-treasurer for the next year.

The new Residents' House for internes will be completed by April 1, 1924, and will be opened with appropriate ceremonies.

NINE ADDITIONAL INTERNES are being sought for the staff of the Woman's Medical College Hospital and adjunct clinics. Three senior internes and six juniors, all women, are desired, for service beginning June 1. Junior interne service covers one year and senior six months. Senior internes will be enabled to take postgraduate work in surgery, medicine and obstetrics during the period of their interneship.

Complete maintenance will be provided the nine internes. The course outlined for junior internes covers three months in combined courses of medicine and pediatrics and surgery and gynecology, two months in obstetrics, three months in clinical, pathological and x-ray laboratory work, and one month in the specialty clinics.

Senior internes are offered postgraduate service in the combined medical and pediatrics department, surgical and gynecological department and the obstetrical department, and the courses are open to young women who have been graduated from first-grade medical schools and have already served a year's interneship in approved hospitals. Senior internes are offered compensation at $25 per month. Applicants should communicate with Dr. Margaret N. Dassell.

As a mark of the esteem and affection in which they hold him, a complimentary dinner was tendered Dr. Adolph Koenig at the University Club, Pittsburgh, on the evening of January 19, 1924, by the following colleagues who were present on this occasion:

Drs. R. R. Huggins, Karl Emmerling, Glen Bowman, G. E. Curry, Albert Pettit, James Burt, J. J. Buchanan, J. I. Johnston, L. Litchfield, O. C. Gaub, E. B. Heckel, T. M. T. McKennan, E. W. Day, George McNeil, A. H. Colwell, H. T. Price, I. D. Metzger, Theodore Diller. Regrets were received by a number of old friends at a distance, who were unable to attend, among them Drs. C. B. Penrose and J. M. Baldy.

At the dinner the pioneer work of Dr. Koenig in conducting the *Pittsburgh Medical Journal,* afterwards merged into the Pennsylvania Medical Journal, many years ago was recalled. The pages of this local journal were kept free from all objectionable advertisements, while every other medical publication in the country, including the Journal of the A. M. A., at that time, contained many of them. Many times Dr. Koenig pointed out to editors of the Journal of the A. M. A. the impropriety of carrying this objectionable advertising and finally though there can be no doubt that this early stand was taken practically alone, the objectionable advertisements were eliminated from our national journal.

Dr. Koenig has wielded a powerful influence in the councils, of the Medical Society of the State of Pennsylvania, and was one time its president. He has served for eighteen years as a member of the State Bureau of Medical Examiners, having been appointed and reappointed by five Governors.

All his comrades testified to the influence in their own lives inspired by Dr. Koenig's noble idealism regarding the calling of the physician.

GENERAL NEWS ITEMS

The Annual Meeting of the American Association for the Study of Goiter was held in Bloomington, Ill., January 23, 24 and 25, 1924.

Dr. Henry O. Marcy, noted surgeon and former president of the American Academy of Medicine, died at his home in Cambridge, Mass., in his eighty-seventh year. He was credited with bringing into use in surgery the buried animal suture (kangaroo tendon). He served in the Civil War as surgeon and was appointed medical director of Florida and later medical director on Sherman's staff in the Carolina campaign. Dr. Marcy was president of the Ameriran Medical Association in 1892, a member of the British Medical Association and a fellow of the American College of Surgeons.

The Eighth Annual Meeting of the American Congress of Internal Medicine and the College of Physicians will be held in St. Louis, Mo., from February 18th to 24th, 1924. Clinical sessions are to be held in the various hospitals. Practitioners and laboratory workers interested in the progress of scientific, clinical and research medicine are invited to take advantage of the opportunities afforded by this session.

Information regarding hotel accommodations, headquarters, transportation facilities, scientific programs, and clinical sessions can be obtained from the Secretary-General, Dr. Frank Smithies, 1002 North Dearborn St., Chicago, Illinois. Headquarters for the meeting will be at the Chase Hotel.

The Citation in the award of the Sofie A. Nordhoff-Jung Cancer Research Prize.

Dr. Johannes Fibiger, professor ordinarius in pathological anatomy at the University of Copenhagen, has demonstrated, following repeated experimentation, that parasites play an important rôle in the formation of certain types of tumors in the proventriculi of rats.

Furthermore he has succeeded in effecting papillomata and undoubted carcinoma through the parasite nematode. Where others have failed after years of persistent researches, he first met with success in artificially inducing malignant tumors through external irritations and so has thrown wide new avenues to future findings. Though the earlier results of Fibiger's work date back a number of years, he unremittingly labored towards an interpretation of the significance of parasitic irritants in malignant tumor formation, likewise of mechanical and chemical irritants. Fibiger and his associates have contributed generously to the literature of cancer production through the feeding to rats of oats and the application of tar to their tissues. In this way they have confirmed the successful work of Stahr and Yamagiva.

In a word, Fibiger's advances towards the solution of the problem of the causative irritants productive of cancer are at the same time most comprehensive and most remarkable.

His name will ever appear inscribed on the first page of the History of Cancer Research.

The Commission on the award consisted of Professors Borst, Doederlein, v. Romberg and Sauerbruch, all of the University of Munich.

Dr. L. Emmett Holt, who died in Peking, China, on January 14, 1924, will perhaps be longest remembered as the author of a book, "The Care and Feeding of Children," which, through twelve editions, has been for twenty-five years an authority in the homes, not only of the United States, but of South America and Europe, and in China and Japan, where it has been invaluable in medical missionary work.

Recognized as a physician of the highest rank and standards, his influence with his profession was invaluable in removing doubts concerning the value of popularizing health education. After the Child Health Organization program had grown up under his stimulating leadership, he enthusiastically joined with several directors of the American Child Hygiene Association, of which he had formerly been president, in bringing about an actual consolidation of these two great organizations in the American Child Health Association, of which Secretary Herbert Hoover is the president, and of which Dr. Holt served as First Vice-president from its beginning.

Dr. Holt was born on March 4, 1855, at Webster, N. Y., was graduated from the University of Rochester in 1875, took his master's degree three years later, and in 1880 was graduated from the College of Physicians and Surgeons of Columbia University. Later, when his work had brought him fame, he received the honory degrees of LL.D. from Rochester, and Sc.D. from Columbia and Brown Universities.

Dr. Holt's activities covered a wide field, but were devoted to a single interest. From 1890 to 1901 he was Professor of the Diseases of Children at New York Polyclinic, and from 1901 he was Professor of the Diseases of Children at the College of Physicians and Surgeons. At the time of his death he was physician-in-chief at the Babies' Hospital, member of the Board of Directors and Secretary of the Rockefeller Institute for Medical Research, and Trustee of the University of Rochester. He was a member of the Association of American Physicians, retiring president of the American Pediatric Society, and a trustee of the New York Academy of Medicine.

He conducted important research on infant metabolism and was the author of a number of pediatric papers. His book on "The Diseases of Infancy and Childhood" has been the standard textbook in pediatrics in the medical schools of the country.

Though nearly seventy years old, he went to China in August, 1923, as special lecturer at the Union Medical College in Peking, an institution maintained by the Rockefeller Foundation. His death is a loss, not only to the nation, but to the world, whose children he made it his mission to save and serve.

THE

MEDICAL SOCIETY OF DELAWARE

ORIGINAL ARTICLE

DIABETES MELLITUS*

EDWARD M. VAUGHAN, M.D.

MIDDLETOWN, DEL.

Since the time of Christ, diabetes mellitus has been known. During the seventeenth century, Willis of England noted the sweet taste of urine was due to sugar.

In 1775 Dobson, finding the blood serum of diabetic patients tasted sweet, concluded sugar in the urine came from the blood and was not made by the kidneys. Chevreul, in 1807 determined the sugar to be glucose or dextrose.

For centuries clinicians and scientists have studied the disease from every angle and added much knowledge to it. But not until in recent months had any one been able to give a clear conception of the cause of the malady. Investigations, studies and glandular experimentations along with a newly developed treatment have revealed to the medical world the probable cause of the disease.

The frequency of diabetes is increasing. Partially this may be due to the more frequent finding of the disease in its incipiency by means of blood tests, urinalysis and the glucose test. In the Jefferson Hospital, Philadelphia, the increase has risen from one to three per cent. Statistics per 100,000 population for the registered area of the United States in 1880 showed 2.8%; in 1915, 17.5%.

New York City, 1900, 10.4%, rising rapidly to 20.00% in 1916.

Boston, 1890, 6.90%, rising rapidly to 25.38% in 1916.

Berlin, 1871, 1.7%, rising rapidly to 22.0% in 1912.

Paris, 1880, 6.3%, rising rapidly to 17.7% in 1912.

England, 1851, 2.3%, rising rapidly to 11.1% in 1912.

To-day there are in the United States probably one million diabetics. Purdy declares the frequency greater in the country than in the cities. With this statement Osler and Hare do not concur.

In 1822, the first year of governmental statistics on record, the consumption of sugar per capita was nine pounds, while of recent date it has risen to 90 pounds. Some one aptly has said a sugar strike or a tax of one dollar per pound would be beneficial to the human race.

DISTURBING FACTORS: Diabetes occurs most often in the fifth and sixth decades, but no age is exempt. It has occurred in infants under one year. Males are the more susceptible. Under ten years, it is about equal in proportion.

The Hindu and Jewish peoples were in the past the most susceptible; the Japanese and Negro races the least. The disease is rare in Holland, Russia and Brazil.

Heredity is substantiated by 20% of all cases. There have been extensive family histories recorded. It may show itself at an earlier period in each succeeding generation. Joslin claims his hereditary cases are usually mild and he thinks heredity a favorable omen.

The proof is lacking that great indulgence in carbohydrates, as sugar, or protein, such as meats, produces diabetes. Allen states that when a large amount of sugar is injected directly into the blood of nondiabetic animals, it does not destroy the cells of the pancreas which produce the necessary internal secretion, nor does it increase the destruction of the cells of the pancreas of diabetic animals. When animals have been brought close to diabetes by partial removal of the pancreas, an excess of sugar exists in the blood and is excreted in the urine for weeks and months through feeding diets high in bread and sugar, but no cell destruction occurs in the pancreas and any reduction in the amount of blood going to the pancreas failed to alter the structure of the pancreas. Mosenthal declares no relation except an empirical one has been formulated as existing between obesity and diabetes, while Joslin claims diabetes is largely a penalty of obesity and the greater the obesity the more likely is nature to enforce it.

Nervous strain and shock in a person whose ability to utilize carbohydrates is below standard favors further impairment of this function and true diabetes which has been latent shows itself. Trauma about the head produces glycosuria and diabetes, in so far as it brings shock. Arteriosclerosis may encourage the condition only theoretically by curtailing the blood to the pancreas. The effect of syphilis is doubtful. Antiluetic treatment is of value in rare cases. There is no proof that pregnancy aggravates diabetes. Frank says pregnancy increases permeability of the kidney to sugar, and renal glycosuria exists in the majority of cases. Slight infections diminish carbohydrate tolerance, and a more severe infectious invasion will be correspondingly greater.

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*Read before the Medical Society of Delaware, Middletown, October, 9, 1923.

Most clinicians believe the secretions, especially the internal one of .the pancreas, are a factor.

F. M. Allen says there is decisive proof that diabetes and the related disorders are now properly regarded as the result of damage of organs by infection or intoxication, particularly the injury of the islands of Langerhans of the pancreas.

Pathologically there exists in certain individuals, as a result of a congenital or acquired defect in the metabolic functions of the body, an inability to utilize for the purpose of nutrition all the carbohydrate material which is taken as food. Such persons suffer from glycosuria. If the defect becomes more marked they gradually lose the power to retain and utilize any noteworthy quantity of the carbohydrate ingested and lose vital resistance. Finally by reason of some further defects in the organs whose functions govern nutrition, such persons actively convert their body fat and proteid tissues into sugar and pass it from them in the urine. In such cases death soon closes the scene.

Causes of Glycosuria: Glycosuria may be due to excesses of grape sugar or carbohydrate foods. Kolish believes there is an organism, a body ferment, which binds the glycogen in the tissues in such a form that it remains in the blood in excess. If the binding body is diminished in power an excess of glucose passes to the kidneys and escapes through them.

The diabetic center in the medulla may be impaired or diseased and glycosuria may follow, due to the disorder of the blood supply in the capsule of Tuer. Administration of certain drugs produces sugar in the urine.

It has been proved that overactivity of the thyroid, adrenal and hypophysis glands is responsible for a diminished tolerance for carbohydrates. Glycosuria and diabetes mellitus are by no means identical conditions, although glycosuria is one of the predominating symptoms in diabetes mellitus. There may be a loss of sugar for years without damaging health, or glycosuria may not be permanent, or it may show only when some nutritional processes are disturbed. Cases of this type should be closely watched, for sugar appearing intermittently in the urine may eventually become true diabetes.

A word concerning glycosuria and life insurance: Most insurance companies, with the exception of the Canadian, when sugar is found in an applicant's urine, even though he is in the best of health, promptly reject him. Diabetes cannot be definitely diagnosed by urinary examinations alone. Blood sugar is not all sufficient, unless it is known that the individual has not been on a limited carbohydrate diet. Renal permeability for glucose is not true diabetes. The differential diagnosis must be confirmed by the glucose tolerance test.

John, of Cleveland, discloses that in his series of 714 observations of glycosuria of nondiabetic origin, 13.8% showed glycosuria. Therefore, to reject an applicant for insurance because of glycosuria, without further investigation, is often unjust to the individual and unprofitable to the insurance company.

A normal individual will not excrete glucose in the urine while taking starch nor sugar in any quantity.

Starches are changed to maltose by the ptyalin of the saliva. Maltose acted upon by maltase becomes glucose or dextrose. The amylose of the pancreatic secretions converts the starch to glucose in the intestines. The glucose is absorbed by the portal circulation and carried to the liver, where it becomes glycogen. The liver stores the glycogen, which is given off in the general circulation as glucose.

Proteins may give origin to sugar; 58%, by weight, of protein is utilized by the organisms as glucose. If a definite amount of glucose and a definite quantity of nitrogen are to be derived from food, there must be a constant ratio between them. This may be called the glucose- or dextrose-nitrogen ratio. The D:N ratio has been found to be 365:1. In the human body the greater portion of waste nitrogen is excreted in urine. In a diabetic the glucose which is not utilized is eliminated by the same means.

If the amounts of the two substances are known and due allowance is made for urinary sugar derived from carbohydrates in the food, an idea may be gained from the D:N ratio in the urine as to the severity of the diabetes. The nearer the figure is to 365:1, the more advanced the diabetes. At this figure the diabetes is complete and no carbohydrate is being utilized. This is the fatal ratio.

Blood Sugar: Its Detection: Blood sugar is generally considered as glucose. Lepine has formulated the theory that blood sugar occurs in two forms, immediate and virtual. The immediate is probably glucose; the virtual a complex carbohydrate which can only be measured as glucose after boiling blood in an acid solution. The normal amount of glucose is 0.06 to 1.2%, more often the higher level. Lewis Benedict's test is the popular method of determination. Take blood early in morning after a night's fast. In a suspected case of high sugar in the blood, it is better to use only 1 c.c. of blood, in other cases 2 c.c. The reason of the smaller amount of blood is that it obviates veni puncture. Administer 100 grams of glucose in lemonade. In a normal case the blood sugar rises rapidly and the maximum point is gained in thirty minutes. Very seldom it requires as long as two hours, and the reading never rises above 0.15% and usually returns to the fasting level within one or two hours, and has a tendency to become slightly lower than the control.

In a diabetic the reaction is very much prolonged and the level of blood sugar rises to a considerably higher level. It may go as high as 300 or 400 mg. of plasma sugar per 100 c.c. Blood is taken at the half hour, and later hourly for 4 hours; 200 c.c. of water is given each hour. It may be 3 or 4 hours reaching the maximum and decreases very much slower than in a normal.

Urinalysis "Qualitative": The urine should be collected so that the early morning hour (before breakfast) terminates the period for one day. This is necessary because the sugar formed from eaten proteid is eliminated before the nitrogen belonging to same. The long period between the evening meal and breakfast allows for elimination of both constituents.

Benedict's solution is ten times as sensitive as others and the most reliable. Fehling's is good as a negative but not so reliable as a positive test.

What Is the Renal Threshold? Ordinarily sugar does not appear in urine until it has been greatly increased. The renal threshold for glucose is .17 to .18% of glucose in the blood. The permeability of the kidney to glucose is not fixed but varies from time to time. There have been cases of glycemia as high as 0.237% with no sugar in the urine; but usually when blood sugar reaches 0.180, glycosuria follows. When the high level displays itself and glycosuria is absent, nephritis would be considered but it does not always exist. Certain cases of diabetes have a subnormal threshold to blood sugar. Renal diabetes is one that has an abnormal permeability to sugar. The kidney allows a small amount to escape constantly in the urine and is not affected by changes in carbohydrate diet, while blood sugar maintains a normal level. It would be more appropriate to term this renal glycosuria.

By some diabetes mellitus is described as a deficiency disease such as pellagra, scurvy, rickets, etc., As starch and sugar, in themselves, in large quantities may not produce this disease, why not consider the cause in a unbalanced diet, one containing high or moderate quantities of meat, sugar, cereals, canned goods that have been long in cooking or drained at the end of the process, eliminating vitamines and mineral substances? Cellulose may be lacking, and constipation and intoxication follow, chiefly from the colon. These poisons present in the blood help to destroy the cells of the organs of the body. This may be why the pancreas in its lessened internal secretion may produce diabetes. The improper ratio may exist between the proper balancing of foods.

The Cardinal Symptoms are polyuria, glycosuria, loss of weight and hunger, sugar in urine ranging from 1 to 10%, blood sugar from 0.16 to higher levels. Complications may exist such as boils, carbuncles, cataract, nephritis, edema, hypertension, gangrene, acidosis and the terminal danger, coma.

Diabetes mellitus is generally considered as incurable. The age, environment and severity of the disease means much as to the prognosis. Under twelve years the outlook is unfavorable. Mild cases in people over fifty years may respond favorably to treatment and may be regarded as curable at least as long as a suitable diet is maintained. Forchheimer says a diabetic is cured if he can eat like other persons without showing sugar. He is of the opinion that there has been too much pessimism regarding the curability and even regarding the recovery from acidosis of diabetics. These views preceded the days of insulin.

Retention of body weight, urine free from sugar, carbohydrate tolerance, no fatigue, vomiting, nausea, vertigo and headache constitute stages of improvement.

(Concluded in March number.)

EDITORIAL

THE VETERANS' BUREAU MUDDLE

The daily prayer, "Lead us not into temptation," as well as the admonitions, "Judge not, lest ye be judged" and "Whosoever is without sin shall cast the first stone," all indicate a humble self-revelation on the part of man that is very touching. The story is told of Lincoln, that, when in practice of his profession, he never collected the full fee in advance, on the theory that, being human, he would not exert himself for his client to the same extent as he would with the fee not fully paid.

All this as a text for comment on the recent disclosures of the affairs of the U. S. Veterans' Bureau. So far the revelations indicate extravagance, if not graft, and indifference to the welfare of the veterans, if not downright incompetence. The man towards whom the shafts of criticism are directed at present is Charles R. Forbes, the former director, who resigned at the request of the late President. We are in no position to pass judgment on him before all the facts are known, nor should he be condemned without a hearing. However, it is improbable that Colonel Forbes is the only guilty party. He could not have carried out his schemes without collusion with his subordinates and the physicians in charge of the various districts. The purchase of medical supplies, hospitalization of the veterans, adjudication of claims for compensation were in the hands of medical men, and it hurts our professional pride that physicians should be found guilty of breach of trust.

However, assuming the guilt as charged, the indictment should be directed against the entire scheme of rehabilitation and the spirit in which it was conceived and carried out.

To begin with, this plan brought about the creation of a new bureau, and we know that bureaucracy is generally the most expensive and inefficient form of government. The bureau was established at a time when money was abundant and the Government as well as the people were spending it like drunken soldiers. Short of using ten-dollar bills as cigar lighters, everybody participated in the orgy of extravagance. A Government official connected with the Veterans' Bureau told one of the examining physicians, "Give the man the benefit of the doubt, there is more money where this comes from." All over the country "drives" were inaugurated to round up disabled veterans. It was discovered that there were almost as many ex-soldiers gassed as participated in the war, and ninety per cent of those gassed, developed "tuberculosis" or "chronic bronchitis." "Myocarditis" became a common affection of the heart, and as to "shell shock"—why, it became the fashion of the day among the veterans. The "flu" was invariably followed by "tuberculosis," and every case of chronic catarrhal pharyngitis developed into "chronic bronchitis." The number of maimed and disabled in the "Battle of Camp Dix" and other camps throughout the country was appalling, to judge by the number of claimants for compensation, who never left this country.

The annoying problem of what to do with these "disabled" veterans was soon solved by putting them into various hospitals, Government and private. For a time things went well. There was considerable enthusiasm on the part of the physicians connected with the bureau, the extra revenue derived by contract hospitals from the ex-soldiers was a source of gratification to the managements, the novelty of the situation appealed to the veteran and kept him in good humor. When this wore off the disabled veterans became restless, grouchy, fault-finding and unmanageable. Contract hospitals commenced to experience ever increasing difficulties in assimilating the "disabled" ex-soldiers, who would not obey orders and did very much as they pleased.

Complaints by the veterans against the hospitals were received by the Bureau officials with sympathy and deference. The dissatisfied were then transferred from one hospital to another until their morale broke down completely. In some institutions with large numbers of "disabled" veterans, "hell broke loose." Drinking, carousing and other vicious practices became rampant, with no authority to stop them.

It was "easy money" and was "easily," if foolishly spent.

When the "disabled" veteran tired of the hospital and was rid of the more pronounced neurotic symptoms, he applied for "vocational training" on increased compensation. In fully fifty per cent of the cases the vocations elected were not fitted to the trainee. Veterans took up "poultry raising" without the slightest intention to follow it up as a permanent occupation. Others, with a modicum of education, took up bookkeeping. Bookkeepers decided to become automobile mechanics, the basis for the choice of vocation being the whim of the moment, the underlying motive, increased compensation. Tired of one kind of vocation the trainee was transferred, at his request, to another, and instances of one man taking up three or four different trades in the course of the year became so numerous as to make the whole business of rehabilitation a joke.

With such an atmosphere, is there any wonder that irregularities and extravagances crept into the U. S. Veterans' Bureau? Indeed, the wonder is that so many of the districts escaped corruption.

It should not be inferred that there have not been thousands of genuine cases of rehabilitation of veterans worthy in every respect, but the great good accomplished is offset by the harm done to young men who by this time have lost all self-discipline and have become practically worthless to themselves and the community, as a result of the lax administration of the Bureau. It is too late to redeem them now;

the damage is done. All we can do is to endeavor to save as much money as possible in the operation of the Veterans' Bureau and thus relieve to some extent the burden of the taxpayer.

A. R.

LETTERS FROM ABROAD

Vienna, Austria.

Dear Doctor:

As I get more acquainted with this city and its customs, I find that people are much the same the world over. The few exceptions, I think, are due to climatic conditions as well as geographic distribution.

The men in the medical profession here, as a rule, are more sincere and less mercenary. The reason for that may be that they can buy their pleasures for very much less money than we can in the United States. They are satisfied with much less. What to them is luxury, to us is very commonplace—a matter of viewpoint, I suppose.

The more I see of the methods employed here to teach and study medicine, the more am I convinced that we in the States are only in our infancy.

I see men who find time to practice and study and at the same time carry on investigations. In other words, the greater the clinician, the greater the laboratory man. I find men at the top of the surgical world who are as familiar with the microscope, stains and histology as they are with the scalpel. It takes only a few minutes to find that the surgeon or internist is a well-grounded pathologist. As a result they are much greater men.

So far, I have visited six hospitals. I don't know how many more there are; I understand quite a few. Every place I have visited is composed of groups of buildings, some ten, others more in number. Every hospital looks large enough to take care of a thousand patients. Some of them are very modern in every respect. Postmortems are made on one hundred per cent of patients dying. I believe it is a state rule, wealth conferring no immunity from an autopsy.

The clinicians have a wealth of clinical material. Some of them are not above experimenting on patients in order to obtain information they seek. Patients do not have much to say about the matter. I go into a ward and examine them without having to get their consent. In the outpatient or ambulance, as it is called, I can cystoscope and study the bladder of any patient I desire, catheterize ureters and study kidney function *ad lib*. When I express a desire to see vesical papillomata, the Chief will gather five or six in one day for my benefit. The only bad feature is that one has to pay for instruction. The sum is very small considering that most of the instruction is individual. It could not be obtained in the States at any price.

I visit Professor Lorenz's orthopedic department daily. It is not only instructive but quite a revelation as well. The methods employed for the bloodless surgery are wonderful. The appliances they have to assist in the methods and the proper application of casts were a great surprise to me. After viewing all these things one must come to the conclusion that Lorenz is a genius, despite the fact that he pursued a very unethical course in New York.

Jacob S. Keyser.

BOOKS RECEIVED

A Combined Textbook of Obstetrics and Gynecology. By J. M. Munro Kerr, M.D., Professor of Obstetrics and Gynecology, Glasgow University; James Haig Ferguson, M.D., Gynecologist, Royal Infirmary, Edinburgh; James Young, M.D., Assistant Physician, Royal Maternity Hospital, Edinburgh; and James Hendry, M.A., B.Sc., M.B., Senior Assistant to the Muirhead Professor, University of Glasgow. New York: William Wood & Company, 1923; E. & S. Livingstone, Edinburgh. Price $10.00.

Medical and Veterinary Entomology. A textbook for use in schools and colleges as well as a handbook for the use of physicians, veterinarians and public health officials. By William B. Herms, Professor of Parasitology in the University of California, etc. Second edition completely revised. New York: The Macmillan Company, 1923. Price $5.50.

Neurologic Diagnosis. By Loyal Edward Davis, M.S., M.D., Ph.D. in Surgery, Assistant Professor of Surgery, Northwestern University Medical School. Illustrated. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, $2.00 net.

American Illustrated Medical Dictionary (Dorland). A new and complete dictionary of terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Veterinary Science, Nursing, Biology, and kindred branches; with the Pronunciation, Derivation, and Definition. Twelfth Edition, revised and enlarged. Edited by W. A. Newman Dorland, M.D. Large octavo of 1296 pages with 338 illustrations, 141 in colors. Containing over 3,000 new words. Philadelphia and London: W. B. Saunders Company, 1923. Flexible leather, $7.00 net; thumb index, $8.00 net.

Annual Report of the Surgeon-General of the Public Health Service of the United States for the fiscal year 1923. Washington: Government Printing Office, 1923.

The Rockefeller Foundation. Annual Report, 1922. The Rockefeller Foundation, 61 Broadway, New York.

Medical Record Visiting List or Physicians' Diary. Revised. New York: William Wood & Company, Medical Publishers. Price $2.00 net.

International Clinics. By leading members of the medical profession throughout the world. Edited by Henry W. Cattell, A.M., M.D., Philadelphia. Volume IV, thirty-third series, 1923. Philadelphia and London: J. B. Lippincott Company.

Operative Surgery. Covering the operative technic involved in the operations of general and special surgery. By Warren Stone Bickham, M.D., F.A.C.S., former surgeon in charge of general surgery, Manhattan State Hospital, New York; former visiting Surgeon to Charity and to Touro Hospitals, New Orleans. In six octavo volumes totaling approximately 5,400 pages with 6,378 illustrations, mostly original, and separate desk index volume. Now ready: Volume I containing 850 pages with 921 illustrations; Volume II containing 877 pages with 1,008 illustrations. Philadelphia and London: W. B. Saunders Company, 1924. Cloth, $10.00 per volume. Sold by subscription only. Index volume free.

BOOK REVIEWS

ABT'S PEDIATRICS. By various authors. Edited by Isaac A. Abt, M.D., Professor of Diseases of Children, Northwestern University Medical School, Chicago; Attending Physician, Sarah Morris Hospital for Children of Michael Reese Hospital, Chicago. Eight volumes. W. B. Saunders Company, Philadelphia and London.

Preparations were made in 1914 to begin this work but were discontinued on account of the World War. The contributors to the eight volumes number 145. With such a large number of writers it ought to be possible for each contributor to give the reader the last word on the portion contributed by him. Subjects of surgical interest are also covered, the idea being that a well trained physician must be able to decide when a condition requiring surgical treatment exists.

Volume I—1240 pages—begins with an introductory essay by Isaac A. Abt, M.D. (11 pages), on "Encyclopedias Which Refer to the Diseases of Children." Abt, beginning with the Chinese Emperor, Hwang-ti (2698-2599 B. C.) gives under the following headings interesting information concerning the following periods: Oriental Medicine, Greek and Roman Medicine, Arabian Medicine, School of Salerno, The Sixteenth Century, The Seventeenth Century, The Work of Tobias, The American and English Systems of Medicine, Systems of Pediatrics and Special Works of Pediatric Interest.

History of Pediatrics (170 pages) by Fielding H. Garrison, M.D., Lieutenant Colonel, Medical Corps, U. S. Army, Washington, D. C. It is shown that pediatrics as a specialized branch of medicine had not developed to any extent before the middle of the nineteenth century. Dr. Garrison outlines the subject more from the viewpoint of the general historian and bibliographer rather than than the pediatrician. It is pointed out that in all prehistoric and primitive phases of human development the child is considered as a negligible factor. In these early periods the strong prevailed and the weak were often destroyed and the infant and child were frequently considered of little value. Infanticide, cannibalism and ritual sacrificing of children were common. Practically the only protection the child had was seen in maternal feeling. Primitive therapy endeavored to cure by prayers, incantations and charms, assigning demons, magicians, witches and angered gods as the cause of disease.

Beginning with written and printed material he takes up Egypt. In the earlier Egyptian civilization there are some evidences of human sacrifice, but no indications of "infanticide" or maltreatment of children. Assyro-Babylonian Civilization (2800 B. C.-3310 B. C.) shows some interesting terra cotta reliefs of mother and child. In India the man was supreme. The status of woman was low and abortion and infanticide were common. In Israel these writings are to be found in the Old and New Testaments and the Talmud. Hellas, Rome, Byzantium, Islam and the chief characteristics of each are there discussed.

The Middle Ages show an entirely new feeling toward childhood and parenthood. In the Renaissance Period (1453-1600) in France, England and Germany many medical books were published, and botany, obstetrics and surgery advanced. Infantile mortality in the sixteenth and seventeenth centuries was very high, due to the many wars and epidemics which spread over Europe.

"The Boke of Children" of Thomas Phayre (1510?-60) is perhaps the earliest treatise in the vernacular.

The most original work up to this date (1518-1575) is by a Swiss surgeon, Felix Würtz. It contained much original and new thought and shows good bedside study. It contains the first treatise on infantile scurvy.

The seventeenth century, according to Dr. Garrison, was an age of great poets, dramatists, philosophers, painters, musicians and mathematicians. William Gilbert, an English physician, wrote his treatise on magnetism (1600). Harvey wrote on the blood circulation (1616-28). Microscopy was founded by Kircher and others, histology by Malphighi, and many other noted physicians of this period did much important and original work. The obstetric forcep, pulse rate and the use of the thermometer were all introduced about this time. Much cruelty to children occurred in the seventeenth century, especially imposed upon illegitimate children.

In the eighteenth century clinical pathology was founded by Morgagni and Matthew Baillie. John Hunter did good work in experimental and pathological surgery. Jenner wrote on inoculation and many other physicians did very creditable work. Infant mortality was still very high in this period.

Dr. Garrison gives, as far as is possible, a review of the most important pediatric literature of the nineteenth and twentieth centuries. Many of the important books and authors receive notice and in his 170 pages are condensed a mass of work that is almost colossal.

Congenital and Acquired Predisposition and Heredity (pages 171-257) is by Clarence C. Little, S. D., President, University of Maine, Research Associate of the Carnegie Institution of Washington.

These 86 pages contain much that is recent, interesting and instructive.. The author differentiates between transmission and heredity. The work of Hertwig with radium on the germ cell of frogs is explained and the results of experiments by Pearl with alcohol on the progeny of the domestic fowl are interesting. Pearl believes that "there is a selective mortality of weaker germ cells, as a result of the alcoholization, thus producing a selected surviving class which represent zygotes formed from stronger germ cells only."

The General Development of Genitics as a Science, the Relation of Soma to Germ Plasm and the Noninheritance of Acquired Characters are all discussed in an interesting manner. The influence is shown of Mendelism, including multiple allelomorphs, multiple factors or determinants, characters dependent upon the simultaneous presence of two or more factors and modifying factors.

President Little, under recent advances, discusses the work of Morgan and his coworkers at Columbia University with the fruit fly. The methods of genetic change, lethal factors and the simultaneous action of many factors. His work with carcinoma and sarcoma in mice is most interesting. Under this head of sarcoma he says, "I have recently obtained most interesting supporting evidence for the hypothesis of multiple factors underlying susceptibility." Of the many other interesting features of this article space does not permit mention.

A Summary of the Anatomy of the Infant and Child is given by Richard E. Scammon, Ph.D., Professor of Anatomy at the University of Minnesota (pages 257-445). This article is very complete and, while admitting that much work has been done, Dr. Scammon confesses that much remains to be accomplished. The finer structure of the bones in childhood is pointed out and the skull, vertebral column, pelvis, thorax, and extremities are then taken up. The musculature, digestive system and teeth are next considered and in a systematic manner the salivary glands, pharynx, tonsils, stomach, the intestinal tract and various organs are discussed. The pediatrist will find much useful and recent knowledge in Dr. Scammon's article. A very complete bibliography follows.

Growth and Development are written upon by T. Brailsford Robertson, Ph.D., Sc., Adelaide, South Australia. The portion of his article on the chemical foundation of growth and energy equivalent of growth are worthy of careful study and postnatal growth is gone into very thoroughly.

Physiology of Metabolism in Infancy and Childhood is presented by John R. Murlin, Ph.D., Sc.D., of Rochester, N. Y., Professor of Physiology and Director of the Department of Vital Economics, University of Rochester, N. Y. The portion of this article on energy metabolism of the infant is most exhaustive and instructive and the 100 pages on digestion and absorption are of absorbing interest and importance to the pediatrist.

Application of Physical Chemistry to the Physiology of Childhood is by Jesse F. McClendon, Ph.D., Professor of Physiological Chemistry, University of Minnesota. The hydrogen ion concentration is the most interesting portion of this contribution to the child's physician.

Walter R. Ramsey, M.D., of St. Paul, Minn., writes a short and interesting article on the Hygiene, Fresh Air, Moisture of Air, Ventilation and Location of the Home.

Josephine E. Young, M.D., of Chicago, Ill., writes on Hygiene of the School Age. Much valuable and interesting information is given on school health administration, mortality at school age, communicable diseases, medical inspection of school children, mental hygiene and the teaching of hygiene and special classes for the blind, deaf and mentally deficient.

This volume also includes short articles on Hygiene of Infants in General by Walter R. Ramsey, M.D., and an article on Climatotherapy by F. L. Wakeham, M.D., N. Y., and a short article on Hygiene of Crippled Children by H. Winnett Orr, M.D., of Lincoln, Neb.

Volume II.—In the article on the Mortalities of Infancy by Richard A. Bolt, M.D., it is noted that the maternal mortality rates in the United States are uniformly higher than in a number of foreign countries. It is, however, gratifying to note that in the United States infant mortality has decreased decidedly in the last ten and especially in the last five years.

Dr. Mark Jampolis, Chicago, Ill., writes a good short article on History Taking and the Physical Examination of Infants and Children.

The chapter on Cerebrospinal Fluid, by Abraham Levinson, M.D., of Chicago, is of special interest and thoroughly up-to-date. He claims that the tubercle bacillus is not only detected with great difficulty in the direct smear but cannot be grown at all on ordinary media, and tubercle bacilli are found in the centrifuged fluid only after careful search. This will console many of us and make us more satisfied with our laboratory reports in our tuberculous meningitis cases.

Dr. Frederick C. Rodda of Minneapolis, in discussing Roentgenology in Pediatrics, draws special attention to its advantages in congenital defects, congenital lues, scurvy, rickets, pyloric stenosis, Hirschsprung's disease and infantile tuberculosis. The figures and discussions of the many x-ray plates are admirable. Perhaps one is especially attracted by the ones on tuberculosis because so much good work has been done recently in this line.

Dr. John Diven of Philadelphia writes a most excellent article on Peculiarities of Disease in Childhood. Every physician should read it, but especially the doctor who is not a child's specialist, as it would give him much ground for thought. He is the only Philadelphia physician who contributes to any portion of the eight volumes.

Heliotherapy is discussed by Dr. Henry Dietrich of Los Angeles, California. He recommends the technic of Rollier. The photographs of patients receiving sun baths are very suggestive.

In Diseases of the Newborn, by Dr. N. O. Pearce of Minneapolis, the subject of hemorrhage and hemorrhagic diseases is carefully and well discussed and sepsis of the newborn is considered in an up-to-date manner.

Julius H. Hess, M.D., of Chicago, in an article on Premature Infants, insists on the importance of breast milk for this class of patients.

The chapter on the Chemistry and Biology of Milk is contributed by Dr. Paul G. Heineman, Ph.D., of Chicago, Ill. Dr. Julius P. Sedgwick of Minneapolis (who did so much to make breast feeding popular in his own city) and Dr. Wyman C. C. Cole of Detroit write on breast feeding and nutrition.

Artificial Feeding of Infants by Dr. Joseph Brennemann, Chicago, is always an interesting subject, and Dr. Brenneman gives a very careful past and present discussion of the various methods used and in present day use.

Diabetes Mellitus is presented by Solomon Strouse, M.D., of Chicago. He gives due credit to the work in 1889 on partial and complete extirpation of the pancreas by Minkowski and von Mering. The treatment by insulin is not sufficiently definite or complete.

Acidosis by John Howland, M.D., and W. McKim Marriott, M.D., shows in a clear manner the clinical and laboratory diagnosis of acidosis and carefully goes into its treatment. This volume also contains articles on scurvy, obesity, pellagra, rickets, the constitutional diatheses of childhood, and acrodynia. It fully maintains the high standard set by the first volume.

E. E. G.

A MANUAL OF THE PRACTICE OF MEDICINE. (Eleventh Edition, entirely reset.) By A. A. Stevens, M.D., Professor of Applied Therapeutics, University of Pennsylvania. Published by W. B. Saunders Co., Philadelphia and London. Price, cloth, $3.50 net.

The eleventh edition, entirely reset, of this convenient Manual of Medicine makes a very valuable and handy desk reference book. Dr. Stevens' work is well known and his conclusions are accepted as authoritative, for all of his theoretical knowledge has been clinched by many years of practical bedside study and teaching.

We recommend the book to the busy physician who needs help in the small points of applied therapeutics and diagnosis. A. C. M.

MENTAL HYGIENE AND THE PUBLIC HEALTH NURSE, by V. May McDonnell, published by J. B. Lippincott, contains, as the title indicates, practical and helpful suggestions for the public health nurse of to-day. Containing as it does, brief and concise, but sufficient discussion of the etiology, early recognition, prevention of mental diseases and the rôle of the public health nurse, the book will not only be found useful as collateral reading in the training school curriculum, but an excellent text for the public health nurse in the field as well. J. A. J.

PHYSICS AND CHEMISTRY FOR NURSES. By A. R. Bliss, Jr., Ph.D., M.D., Professor of Pharmacology, Emory University, School of Medicine, and A. A. Olive, A.M., Ph.D., Professor of Physics and Chemistry, Howard College. Third Edition, 278 pages, 70 illustrations. J. B. Lippincott Co., 1923.

The subjects presented by the authors in this book give evidence that they have had in mind the busy life of the student nurse, and also that time is an item to be considered in procuring the theoretical part of their education to become a trained nurse. The subjects are well covered and presented, in as condensed form as possible and yet in such a manner as to be readily understood by the student without a preliminary training in physics and chemistry. Another good feature is that the experimental part is so arranged as to require very little expense for apparatus. H. C. F.

EPIDEMIOLOGY AND PUBLIC HEALTH. A Text and Reference Book for Physicians, Medical Students and Health Workers. In Three Volumes. Volume II, Nutritional Disorders, Alimentary Infections, Percutaneous Infections. By Victor C. Vaughan, M.D., LL.D., Emeritus Professor of Hygiene in the University of Michigan; assisted by Henry F. Vaughan, M.S., Dr. P. H., Commissioner of Health of the City of Detroit, and George T. Palmer, M.S., Dr. P. H., Epidemiologist for the Department of Health of the City of Detroit. Pp. 917; 53 illustrations. St. Louis: C. V. Mosby Company, 1923.

The second volume of Vaughan's Epidemiology and Public Health continues the arrangement adopted in Volume I and attempts to group the diseases according to the avenues through which the virus reaches and infects the body. Diseases discussed in this volume are classified as (1) nutritional disorders; (2) alimentary infections; (3) percutaneous infections.

He includes very properly a large number of diseases new in a work of this kind, as scurvy and beriberi under nutritional disorders, and places rickets, pellagra and goiter among diseases not definitely classified.

He claims that food poisoning is due to infection of the food and that the infecting organism may grow in the animal body or it may, outside the body, produce a toxin to which all deleterious effects are due.

He calls attention to the fact that epidemiology is much broader and embraces in its scope bacteriology.

The chapter on "The Typhoid Fevers" is above criticism and he reiterates the well-known fact that "the disposal of human excreta is of prime importance in the eradication of this disease. To build sewers is not sufficient; ordinances must require sewer connections. The effluent from sewers must be rendered harmless before it is discharged into any stream or other body of water."

He urges that antityphoid vaccination should be more generally employed, but does not believe it is feasible to make it compulsory.

The book is well written, especially the historical sketches and symptomatology, and is an invaluable addition to the library of everyone interested in public health. C. H. M.

EXERCISE FOR HEALTH AND CORRECTION. By Frank L. Dickson, M.D., and Rex L. Diveley, M.D. 112 illustrations, 127 pages. Price $2.00. J. B. Lippincott & Co.

The admitted value of exercise in overcoming defects and developing bodily health and vigor is often counteracted by the inability on the part of the physician to instruct the patient in systematic exercise. For one reason, he himself is a total stranger to exercise of any kind, golf excepted. Then, even if he should know the tricks, he could not take the time to teach the patient. This book solves the problem by describing a number of exercises, illustrated by photographs. The series is divided into groups: bed exercises, setting-up exercises, postural exercises in children, in the recumbent position and standing; foot exercises. The illustrations are very good and the directions brief and explicit. A. R.

NUTRITION OF MOTHER AND CHILD. By C. Ulysses Moore, M.D., M.Sc., Instructor in Diseases of Children, University of Oregon Medical School, etc. Including menus and recipes by Myrtle Josephine Ferguson, B.S., Professor of Nutrition, Iowa State College, Ames, Iowa. With 33 illustrations. Philadelphia and London: J. B. Lippincott Company. Price $2.00.

This book forms one of a series of manuals for nurses. The subject is so written, however, as to make it available to the social worker and to those of the laity who are interested in the problem of nutrition. It gives an excellent presentation of diet and its effect upon the nutrition of the child, from conception to puberty. The section on breast-feeding describes graphically and in detail a practical method for stimulating the flow of milk. The common deficiency diseases are described quite fully, as are certain frequent causes for indigestion and its attendant malnutrition.

In addition to those for whom it was written, the practicing physician will find in this work much useful knowledge presented succinctly, yet in a way which is adequate for his needs. J. C. G.

HABITUAL CONSTIPATION. Its Causes, Consequences, Prevention and Rational Treatment. By Ismar Boas, M.D., Professor of Medicine in Berlin. Translated into plain, nontechnical English by Thomas L. Stedman, M.D. Funk and Wagnalls Company, New York and London.

This book is written for the layman and, as the author states in the preface, "is intended in no way to supplant the physician, but to second his efforts toward effecting a cure of this widespread evil." The author discusses in a simple and convincing manner the causation and modern treatment of constipation, and, while the treatise is intended for the layman, it comes from the pen of so eminent a medical authority that a great deal in it will prove of interest to the physician.

The translation is very good, the print excellent, and altogether it is a creditable production. We heartily recommend it to physicians as well as their patients. A. R.

THE SUCCESSFUL PHYSICIAN. By Verlin C. Thomas, M.D., Visiting Physician to Franklin Hospital, San Francisco. Octavo of 303 pages. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, $4.00.

This is a book with a real mission; every young practitioner should read and digest it in the first month out of college and thus secure for himself a real foundation upon which to build a practice.

Every experienced practitioner will find in it nuggets of pure gold which will lift him from any rut into which he may inadvertently have become settled, and help him to get a new hold on himself and make a new start toward an undreamed-of success. J. M. Q.

HOW WE RESIST DISEASE (An Introduction to Immunity). By Jean Broadhurst, Ph.D., Assistant Professor of Biology, Teachers' College, Columbia University. One hundred and thirty-eight illustrations and 4 color plates. Philadelphia and London: J. B. Lippincott Company, 1923. Price $2.50.

As stated in the descriptive comment of this book, "the author's aim has been to put into clear and simple language the main principles of immunity, covering in a general way the most important preventive and curative practices," and it "has been prepared with special reference to nurses and general college students." The student of household administration and the nurse, more especially the one who is engaged in community work with health board and allied agencies, should possess a copy of this work. The book is profusely illustrated in order better to aid the descriptive text. As many illustrations as may be needed are used so that the reader may have no difficulty in acquiring the knowledge that is being imparted. A copy of this work should be in all public libraries, in order that the laity may be better instructed in how we resist disease. F. C. H.

EXERCISE IN EDUCATION AND MEDICINE. By R. Tait McKenzie, M.D., LL.D., Professor of Physical Education and Physical Therapy and Director of the Department of Physical Education, University of Pennsylvania. Octavo of 601 pages, with 445 illustrations. Philadelphia and London: W. B. Saunders Company, 1922. Cloth, $5.00 net.

The thoroughly revised third edition of this well-known book is more than welcome. This edition affords the author "an opportunity of inserting the experiences gained as Physical Training Officer in the British Army at Aldershot, as Medical Officer in command of a convalescent camp of five thousand men,

(Continued on page xiv.)

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ORIGINAL ARTICLES

SYMPOSIUM ON SURGERY OF THE KIDNEY AND URETER

SURGERY OF THE KIDNEY AND URETER*

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AND
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ROCHESTER, MINNESOTA

In the early period of renal surgery the operative mortality was very high. From 1860 to 1875, nephrectomy was followed by a mortality of 70 per cent. Gradually, fewer deaths have resulted, until now they usually occur only after unavoidable accidents. A better knowledge of the physiology of the kidneys and the diseases affecting them, earlier diagnoses, improved asepsis, and more skillful surgical procedures, permit results in renal surgery equal to those obtained in abdominal surgery. The patients in this series, illustrating the results of various renal and ureteral operations, were treated at the Mayo Clinic between January 1, 1907 and December 31, 1922.

RENAL ANOMALIES

Horseshoe kidneys: A relatively high morbidity follows operations on horseshoe kidneys because of their unusual location and the deficient pelvic drainage. They are situated low, are usually firmly fixed to the spine by the connecting bar or isthmus, and are supplied with multiple and irregularly disposed blood vessels. In order to expose them, the usual posterior lateral incision is carried further forward. In most instances this will permit visualization or examination of the isthmus. The incision also will permit examination of the renal pelvis, or the removal of a stone from the pelvis, which in the unrotated, fused kidneys, faces anteriorly.

Double kidney: Duplication of the renal pelvis, or double kidney, demands few unusual surgical procedures. In a small proportion, the diseased segment may be resected and the normal portion preserved. This necessitates a wide area of tissue between the pelves, a separate blood supply to each portion, and a complete histologic unity of the two portions. An extensive infection in one portion of the kidney, tuberculous or otherwise, contraindicates resection, for the interpelvic portion is almost invariably infected, and, in most instances. the apparently normal pelvis also is more or less infected. Heminephrectomy was performed in five such cases, in two of which complete nephrectomy was necessary later.

Pelvic kidneys: Because of short and tortuous ureters, pressure from the pelvic organs, and obstruction to the ureteropelvic outlet, there is a relatively high morbidity in cases of pelvic kidneys. Not infrequently also, the kidneys are single, making identification of other renal tissue necessary before surgery is considered. A number of such kidneys are discovered only through abdominal explorations. They may not be diseased, will continue to function, and the patient may live a normal number of years. Hydronephrosis, infection, and the formation of stone are the most common pathologic conditions. The kidneys are retroperitoneal and are reached through a transperitoneal incision. The immediate and late results following nephrectomy are good.

Unilateral fused kidneys: This uncommon condition rarely necessitates or permits surgical intervention. The kidneys may function normally and in most instances are discovered only at necropsy, or in the course of abdominal operations for other conditions.

HYDRONEPHROSIS

Usually, uninfected hydronephrotic kidneys shell out readily, adhesions are few, the vascular supply is limited, and the possibility of operative difficulty only slight. If the dilated kidney is very large, removal is facilitated by first withdrawing the fluid; the sac may then be readily peeled out through the usual incision. In case it is desirable to remove an extremely large kidney intact, enlarging the usual posterolateral incision anteriorly and pulling the peritoneum toward the middle line will afford a much larger outlet. In most instances, simple lumbar extraperitoneal nephrectomy may be carried out. In a few of our cases, on account of previous operative procedures, infection, or extreme destruction of renal tissue, subcapsular nephrectomy was necessary. In a number of cases of children, and in certain other cases in which the diagnosis had not been definitely established, the kidney was removed transperitoneally. Opening the pleura or the peritoneum in uninfected cases rarely causes postoperative complications. In certain cases in which there is extreme infection, opening the large serous cavities may cause serious infections.

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*Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 4, 1923.

†Resident Surgeons, St. Mary's Hospital, Rochester, Minnesota.

PYONEPHROSIS

In cases of pyonephrosis there is constant infection. The most common associated condition is the formation of stone. Perirenal infection is common, but apparently does not increase the postoperative morbidity so long as the peritoneum is intact. Previous operations on the kidney complicate removal, and may make a subcapsular operation necessary. The capsule is extremely adherent to the surrounding structures; it is difficult to find the line of cleavage, and generally there is marked infection. The kidney is easily located in the center of the mass, and, in most instances, may be readily enucleated. Opening the peritoneal cavity in these cases is much more serious than tearing the peritoneum during the removal of an uninfected hydronephrotic kidney. The peritoneum was unavoidably opened in 23 of 471 cases in which nephrectomy for pyonephrosis was performed; two patients died of general peritonitis. The pleura was opened in three cases without serious consequences, but in another case localized empyema developed which required surgical treatment.

RENAL TUBERCULOSIS

The excellent results reported following surgical intervention in cases of renal tuberculosis indicate that the condition should be treated surgically. Nephrectomy is best performed through a posterolateral incision, which exposes only a limited, easily drained area, provides a satisfactory surgical approach for even large hydronephrotic kidneys, and leaves the peritoneal cavity intact. In most cases, the perirenal fat, which is often infected, is removed with the kidney. If the kidney is removed transperitoneally, care must be taken to remove it without rupture, and to wall off the general peritoneal cavity, since fatal peritonitis may develop in case of contamination. Isolation of the remaining stump of the ureter prevents widespread contamination of the postoperative area. This is best accomplished by fixing the end of the ureter into a rubber tube.

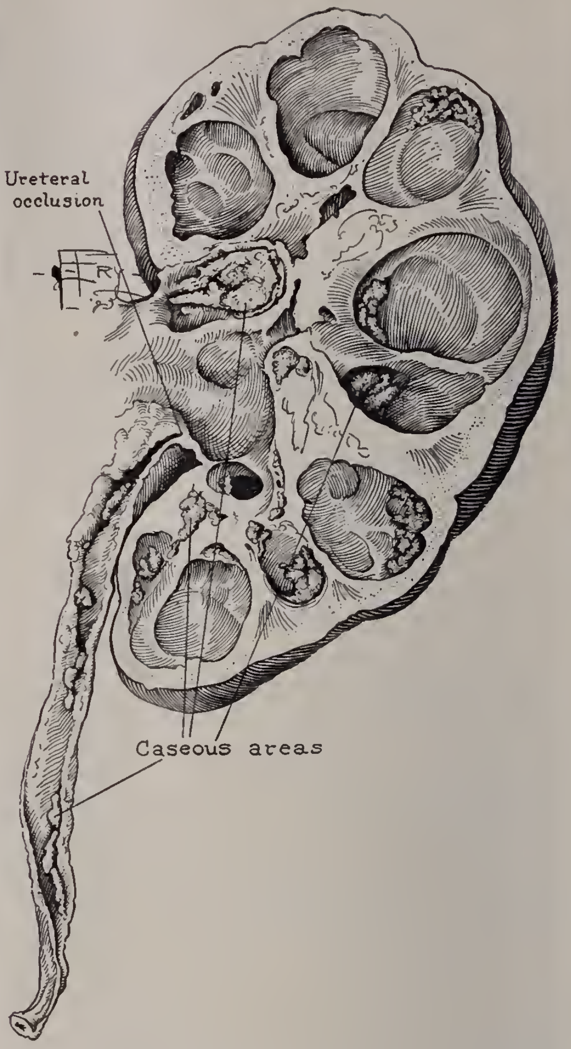

Fig. 1. Extensive caseating tuberculosis of the kidney, with occlusion of the ureter.

The majority of deaths occurring shortly after operation are due to peritonitis, meningitis, pulmonary complications, or to disease of the opposite kidney, either tuberculous infection or chronic nephritis. More than 80 per cent of all late deaths are caused by tuberculosis in the opposite kidney, or the general miliary type (Fig. 1).

TUMORS OF THE KIDNEY

About 80 per cent of all tumors of the kidney are carcinomas or so-called hypernephromas. They grow slowly, bleed freely, and generally are localized within the renal capsule. Nephrectomy in the early stages usually gives satisfactory, immediate and late results. Tumors of the kidney in children are comparatively symptomless, grow rapidly, recur frequently, and, in most instances, are fatal. Metastasis is uncommon, occurring only in the late stages. Death usually results from the local condition, either an extreme invasion of the surrounding tissues, or a local recurrence after operation. About 5 per cent of all tumors of the kidney are of the pelvis, and in most instances are either papillary or squamous cell in structure. The papillary tumors are of a low degree of malignancy and rarely metastasize, but have a marked tendency to form persistent transplants to the ureters and bladder.

The mortality following nephrectomy for malignancy is higher than that of any other type of renal surgery. The most common causes of death are infection, hemorrhage, and pulmonary emboli. Infection from peritonitis is not infrequently the cause of death in transperitoneal nephrectomy (Figs. 2, 3, and 4).

RENAL STONE

Renal stones are now usually removed through the renal pelvis. More than 80 per cent of such stones are either in the pelvis or calices, and many of the smaller stones in the cortex may also be removed through the pelvis or through a combined pelvic and small parenchymal incision. In most cases in which the stone is too large to be removed through the pelvis, or without destruction of a large amount of renal tissue, nephrectomy is advisable. If the opposite kidney is normal, the small amount of functioning renal tissue which would remain after extreme parenchymal exposure is not of sufficient value to risk postoperative infection and hemorrhage. Closure of the opening in the pelvis, by direct suture, turning down a portion of the renal capsule, or by covering with a fatty fascial flap, diminishes the amount of urinary leakage, shortens the convalescence, and, in most cases, secures healing by primary intention.

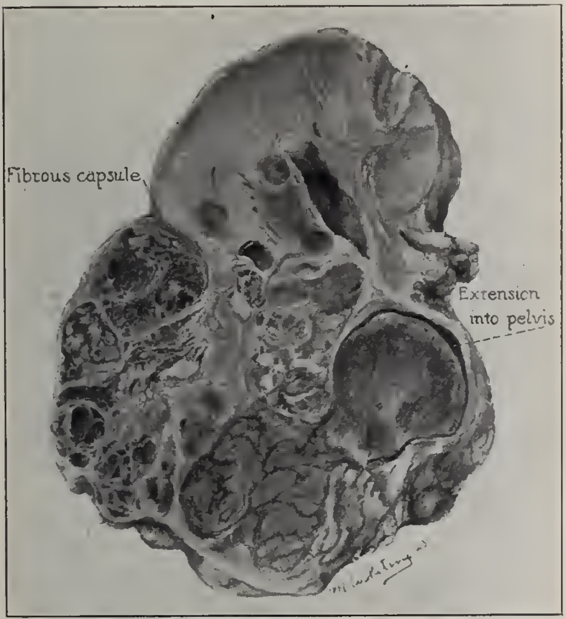

Fig. 2. Extensive carcinoma of the lower pole of the kidney.

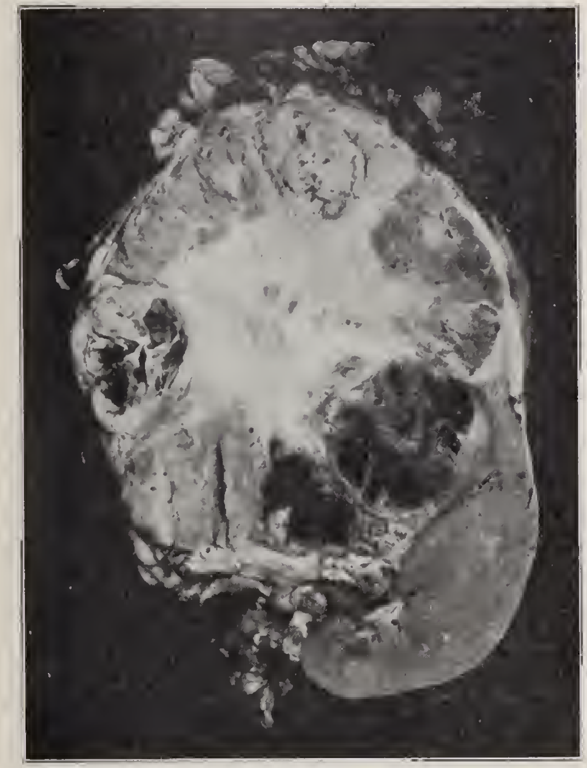

Fig. 3. Carcinoma of the upper pole of the kidney with extensive hyalinization and hemorrhagic cyst formation.

The fluoroscope at the operating table, as employed by Braasch and Carman, greatly aids in locating small stones and in determining whether other calculi are present. For a number of years we have been using the fluoroscope almost routinely in such cases. If patients are large and

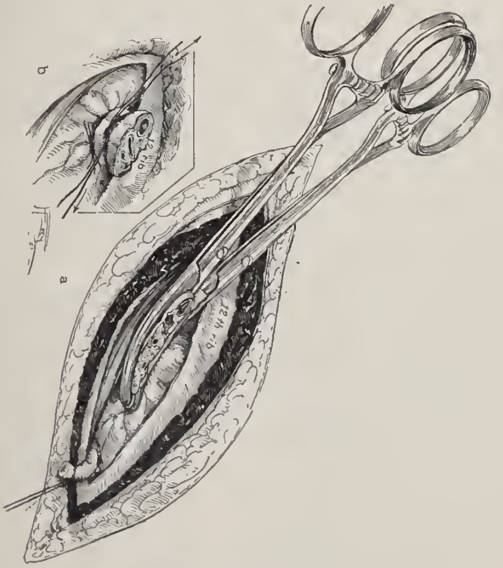

Fig. 4. Method of clamping and double ligation of the pedicle of the kidney following nephrectomy.

fleshy, and it is impossible to lift the kidney up into view, fluoroscopic examination is not entirely satisfactory; but, if the examination is satisfactory, renal calculi are almost never overlooked. Often stones can thus be located with much less trauma to the kidney than by searching through the incisions (Fig. 5).

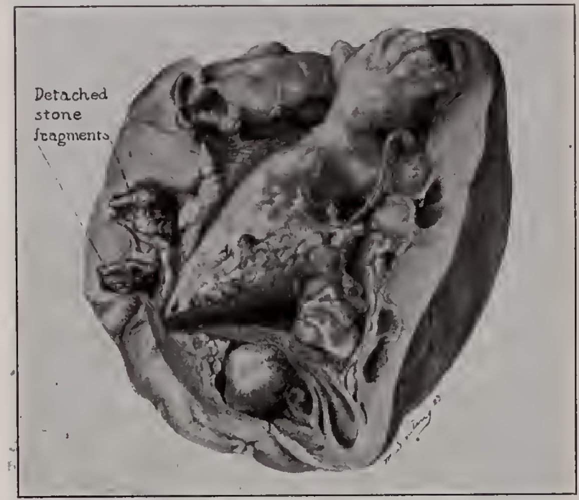

Fig. 5. Large coral-shaped stone, with moderate destruction of renal substance.

CONTUSIONS OF THE KIDNEY

There may be varying degrees of contusions of the kidney. No doubt there are many instances in which slight rupture, followed by moderate pain, disability, and hematuria, clears up completely without surgical interference. In the presence of extensive hematuria, increasing perirenal hematoma, or infection or involvement of the peritoneum an exploratory operation is indicated. In certain cases, shock, infection, and severe trauma contraindicate an extensive operation; simple drainage or packing generally serve as a satisfactory temporary measure.

Suture of the renal tear and of the capsule in certain cases has been followed by satisfactory results. In the majority of cases, if the opposite kidney is normal, the diseased organ should be removed. The operative mortality from nephrectomy in these cases is low, the possibility of hematuria and infection is removed by nephrectomy, and the operation is followed by a short, satisfactory convalescence. Conservative operations are often followed by infection, urinary fistulas, disagreeable, protracted convalescence, and not infrequently by a difficult secondary nephrectomy (Fig. 6).

URETERAL STONES

The majority of ureteral stones are found in the lower third of the ureter, and are best reached by a low rectus extra transperitoneal incision. About 75 per cent of ureteral stones are satisfactorily treated by manipulation; 25 per cent require operation. The exact location of the incision depends on the location of the stone. In cases in which the stone is in the upper third of the ureter, the posterolateral incision gives the best exposure. The kidney may also be inspected, and if necessary, as occurs in about 10 per cent of the cases, it may be removed through the same incision. The lower portion of the ureter adheres to the peritoneum when the peritoneum is retracted toward the middle line. In certain cases, it is extremely difficult to locate the ureter, and it may be necessary to trace it down from the upper segment into the pelvis, or to pick it up as it crosses the external iliac vessels. Palpation of the stone often serves as a guide, and sometimes the ureter may be opened and the stone removed with the exposure of only a very small segment of the ureter. In secondary operations, or in the presence of marked peri-ureteral infection, the peritoneum may be opened accidentally, or it may be necessary to open it in order to locate the ureter. In all cases it is advisable to suture the peritoneum as soon as possible in order to avoid contamination.

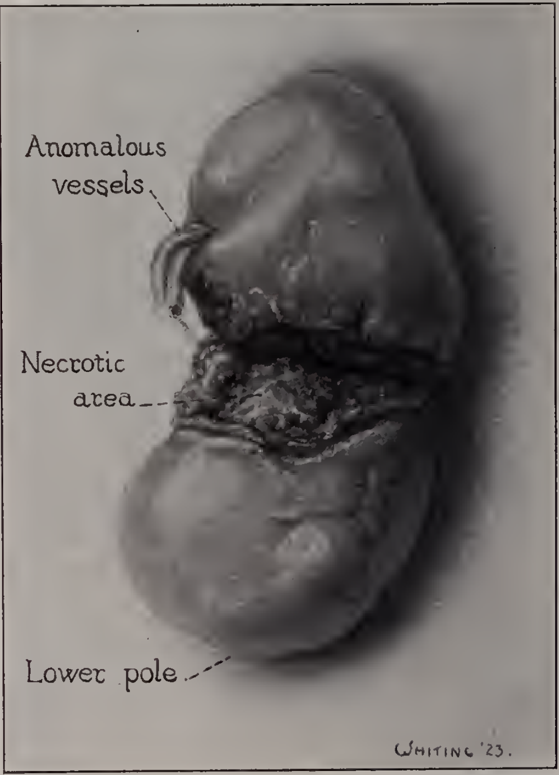

Fig. 6. Extensive laceration with complete tear through the substance of the kidney.

The mortality in ureterolithotomies is very low. In more than 500 uncomplicated surgical ureterolithotomies there was only one death.

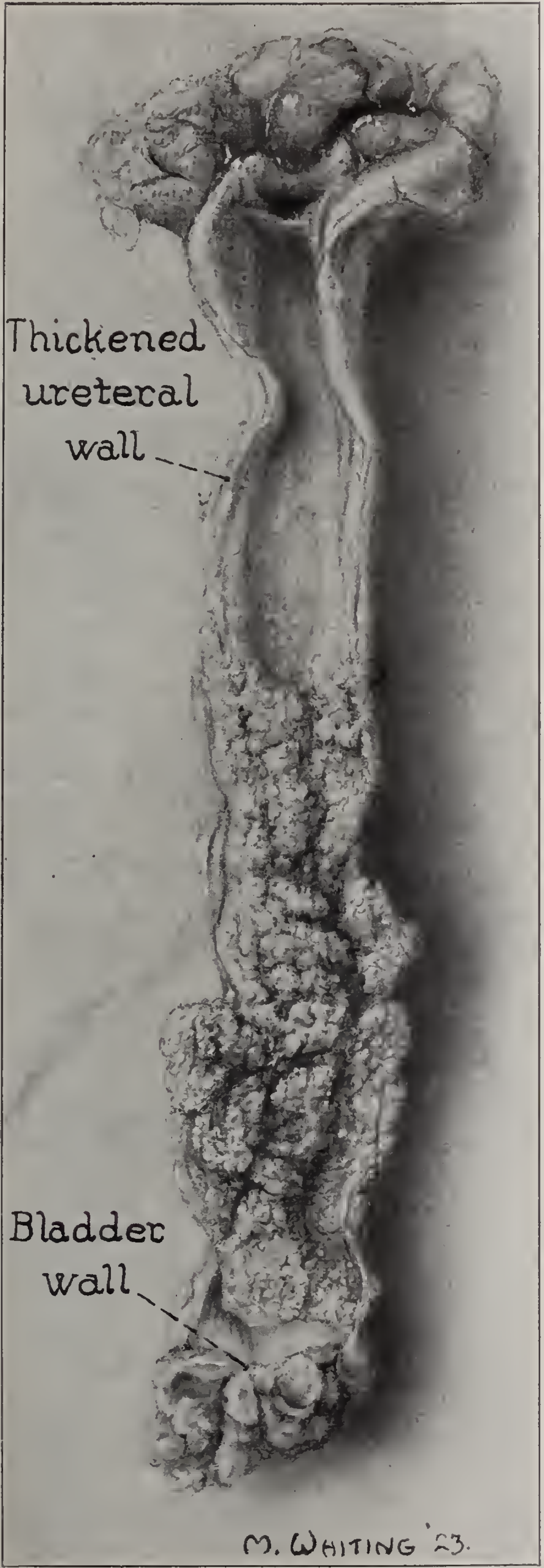

Fig. 7. Primary tumors of the ureter with resection of a portion of the wall of the bladder.

URETERAL TUMORS

Ureteral tumors generally cause symptoms similar to those of renal tumors, or tumors of the renal pelvis. There is in most cases moderate intermittent, unilateral hematuria, and ureteral obstruction that often causes marked hydronephrosis. Histologically, most of these tumors are similar to those occurring in the renal pelvis, or in the urinary bladder; they originate directly from the epithelial lining of the ureter, and are papillomatous. The diagnosis is usually difficult; in most instances it is made only at operation. Their successful surgical removal is rare.

A complete nephro-ureterectomy should be performed in all cases of definite ureteral carcinoma. The ureter and kidney are freed through a posterolateral incision, and allowed to hang from the incision by the ureter. The patient is then turned on his back and the ureter excised at the ureterovesical juncture through an anterior rectus extraperitoneal incision; the kidney and ureter are then removed through the posterior incision. The most common site of secondary implantations is at the ureterovesical angle; on this account it is advisable, in some cases, to remove a portion of the wall of the bladder and the ureteral insertion.

Metastasis to the bladder, either from a tumor primary in the ureter or reaching the bladder through the ureter from the pelvis of the kidney, is extremely persistent (Fig. 7).

MODERN DIAGNOSTIC METHODS IN RENAL AND URETERAL SURGERY*†

ENOCH H. ADAMS, M.D.
DANVILLE, PA.

Urology has been called the father of surgery, and I trust a brief account of its evolution will prove of interest, so that we can better judge the wonderful improvements which have been made in the past.

From its humble beginning up to the present time, advancements have been made until urology has become almost an exact science. Now, one operates upon a urological condition with almost a definite knowledge of what the findings will be. With the instruments at hand, and the correct interpretation of results, one now operates with an equanimity of mind such as few of the specialties offer.

Among the writings of the ancient Hindus as far back as 600 B. C. mention is made of those who cut for stone. That urology has been a specialty for generations is brought to light in the Oath of Hippocrates, "I will not cut persons laboring under the stone, but will leave this to be done by men who are practitioners of this art."

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*Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 4, 1923.

† From the Geisinger Memorial Hospital.

Real scientific work was not done until the perfection of the cystoscope. In 1877 Max Nitze demonstrated his instrument in a dead bladder before a meeting of medical men. At this time the problem of lighting was not overcome, and a white hot platinum loop, with a water cooling device was used. Although Edison produced his incandescent bulb only two years after this, it was not until 1887, eight years after its invention, that it was used in a cystoscope. This enabled the eye to reach in where the hand could not follow, and helped to remove much of the element of guess work in this branch of medicine. With improvements made by such men as Brenner, Leiter, Tilden Brown, Lewis, Buerger, Caspar, Albarran, and others, we now have the wonderful instrument in use at the present time which has been the creator of this branch of medicine.

Following the perfection of this instrument, the ureters were the next point of attack, and many and various attempts were made until Brenner in 1888 succeeded in catheterizing the ureters in the female, and Brown in 1893 succeeded in the male. A diagnosis of pyonephrosis was made on his findings, and Dr. Halstead performed a nephrectomy at the Johns Hopkins Hospital, the first kidney operation to be performed based on cystoscopic findings.

The discovery of the roentgen ray made the next great step in advance, and Tuffier in 1897 suggested the use of an opaque catheter combined with roentgen ray. Klose in 1904, enthusiastic over his ability to render the alimentary tract opaque by the use of bismuth and roentgen ray, suggested the introduction of a bismuth suspension into the renal pelvis. This was unsatisfactory, as it left particles suspended in the organ and was hard to recover. The various silver salts were experimented with until to-day we have quite satisfactory media. Pyelography gained favor slowly, but since 1910 Braasch of the Mayo Clinic has done much to place it in its proper sphere. His excellent monograph on pyelography published in 1915 has been a very valuable contribution.

As previously stated, Klose used bismuth. Next, solutions of colloids of silver were used by Voelcker and Lichtenberg. This soon gave way to the newer silver salts, as argyrol, cargentos and then silver iodid. Burns advised a 10 per cent solution of thorium nitrate which was clear and colorless, hence much easier to handle, and due to its higher atomic weight much better pictures were obtained. At present, sodium bromid and sodium iodid are probably the most satisfactory and most widely used.

Cameron has shown by animal experimentation that a 13½ per cent solution of sodium iodid is nontoxic and nonirritating, that it is easy to prepare, and has the lowest viscosity and lowest osmotic pressure of any mediums used. This, together with the fact that it exhibits an opacity to roentgen rays which actually increases relatively with increasing penetration of the rays, would lead us to conclude that it is the most ideal medium we have found at present.

TECHNIQUE: Regarding technique there is still a difference of opinion, as both the glass syringe and the gravity methods have their advocates. Doubtless for the inexperienced, the latter method is better, as the pelvis will be filled slowly and if the buret is held only a short distance above the patient, only a slight pressure can be exerted, and very little danger of overdistension will be encountered. If the hand syringe is used, great caution must be practiced not to overdistend the pelvis, and emphasis must be laid on the slow injection of the medium. An advantage of the syringe method is the ability to withdraw the solution quickly after the picture is taken. In injecting, one should always stop short of pain, as the stage of fullness or discomfort is as far as we should go. Before injecting the solution one should withdraw the catheter 1 cm., because if it should be in the superior calyx and this became filled, pressure symptoms would be caused although the pelvis itself might be fairly empty.

There are many reactions following pyelography, but mostly of a mild nature. Pain is the most frequent and is referable to the kidney area. Nausea and vomiting are sometimes encountered, but are rare; occasionally chills and fever may follow, as is possible in many cases of urethral and ureteral manipulations. Doubtless, this is due to an existing infection lighting up, and not one carried in by the catheter. Serious reactions are rare when the technique is properly carried out, and I believe are due mostly to errors in technique. To quote Sir John Thompson Walker in a recent address before the Congress of Radiology and Physiotherapy, "the occasional dabbler has no place here," referring to pyelography.

Hardly an issue of a surgical magazine appears these days in which one or more anomalous conditions of the urinary tract are not reported. It is of interest to note that the first pyelogram reported was by Klose with the bismuth suspension in a case of a completed double ureter. Formerly these anomalies of the urinary tract were reported from the postmortem room, now they are an everyday occurrence in the clinical field. Pyelography with the shadowgraph catheter is a very valuable aid in diagnosing these conditions.

Hydronephrosis: Hydronephrosis is quickly detected by the insertion of a ureteral catheter, as there will be rapid drainage of the residual urine. It may be necessary to use a hand syringe and suction. Withdrawal of more than 15 or 20 c.c. of urine from the kidney pelvis is definite evidence of hydronephrosis. Pyelography is the most accurate method, but should only be used when other methods have failed to reveal the true condition. Before taking a pyelogram one should withdraw all the retained fluid, as this will dilute the medium and cause a poor picture. Due to the large size and the poor drainage of these pelves, it is well to withdraw all the solution used in filling the pelvis, after the picture is taken. Perhaps one should refrain from injecting both sides at one sitting in these cases, as the remaining side may be the sole source of renal function.

Pyonephrosis: In pyonephrosis the urine collected may be grossly purulent or the condition may only be revealed by laboratory procedures. This condition soon produces changes in the kidney substance, the pelvic outline becomes enlarged and irregular, and the ureter is involved and becomes dilated. This is very well shown by means of the pyelo-ureterograms.

Renal Tuberculosis: Renal tuberculosis is a fairly common condition and may give few or many symptoms, but its ultimate diagnosis depends upon finding the bacilli in the urine and then determining their origin by ureteral catheterization. To find the bacilli one may use one of two methods or both. The smear is very satisfactory in many cases, while the guinea pig inoculation is time-consuming, but probably somewhat more accurate. This method will clear up the diagnosis in cases which cannot be definitely proved in any other way. Cystoscopic examination is very valuable, as the bladder frequently has a characteristic appearance, while pyelograms may show the calices dilated, with evidence of extension into the cortex. The ureter becomes dilated and strictures occur. Probably this is the most frequent cause of ureteral strictures.

Renal and Ureteral Calculi: In renal calculi, the most characteristic symptom is pain, which calls for an x-ray. This will, in nearly every instance, show the shadow. There are certain of the rarer stones which will not do this, but with proper technique, not over 2 per cent to 4 per cent will escape. Having found the shadow, unless it is of the branching coral type, we are not satisfied. The shadow must be definitely proved to be in the urinary tract, or else there will frequently be chagrined surgeons at the operating table. One is not justified in operating for shadows in the ureteral or kidney region until they have been proved to be in the urinary tract. The instances of shadows, typically renal, in the x-ray, which proved to be gall-stones, glands, phleboliths, enteroliths or calcified areas in the renal organs, have been far too numerous. Shadows in the ureteral region must be in contact with the shadowgraph catheter or be intensified by the ureterogram. Frequently shadowless stones can be brought out in pyelograms by causing an area of less density. In the case of ureteral stones, it may, at times, be necessary to take the picture at different angles, after the method of Kretschmer.

Renal Tumors: The most common signs of renal tumor are hematuria, pain, and the presence of a tumor mass in the renal area, and of these hematuria is the one which most frequently brings the patient to the doctor. Large amounts of blood well mixed with urine, occurring in attacks of brief duration not preceded by pain, usually indicate a renal tumor. Given one of these symptoms, it is necessary to carry out a complete cystoscopic examination. If one sees blood coming from a ureteral orifice, a differential function will do much to help us. If there is a marked diminution or even absence of function on one side, one must strongly suspect tumor. The greatest help of all comes from pyelography and the changes to be looked for are the presence of a filling defect or the distortion of the outline of the calices, until the so-called spider form is attained, or there may be a hydronephrosis due to the obstruction of the renal pelvis.

Formerly the prognosis of renal tumors was very bad, because they had to be of sufficient size to be palpated before diagnosis could be made, but with the development of pyelography, this has changed so that pyelography plays no more important rôle than in the diagnosis of this condition, and we are continually searching the pyelogram for the characteristic changes which will reveal to us the early tumor, whether it is replacing the kidney substance, causing a distortion in the calices, or a papilloma of the pelvis with its filling defect.

Value of X-ray in Urology: X-ray and urology go hand in hand, and only by this combination can we achieve the best results. Almost every condition referable to the kidneys and ureter calls for the use of the x-ray. All cases of pain in the abdomen, pain in the back, blood or pus in the urine, not of venereal origin, bladder irritability not definitely ascribed to lower urinary tract obstructions, and every case of indefinite abdominal mass should be rayed. X-ray combined with pyelography brings out abnormalities in the size and contour of the renal pelvis, and often reveals the underlying cause, the size, shape and exact position of renal and ureteral calculi. Renal tumors are thus found long before they can be palpated, and anomalies of the kidney and ureter are readily detected. Hydronephrosis, tuberculosis and kidney infections have their pyelographic characteristics and are more easily recognized. In cases of hydronephrosis, it is well to take a picture in the upright position to observe the degree of mobility of the kidney, and the presence or absence of ureteral kinks or strictures. Possibly more stress should be laid on the advantage of ureterograms, which will reveal many kinks, dilatations and strictures of the ureters. For kinks of the ureter Dr. Hunner relies on the "hang" which he gets from a wax bulb catheter. Dr. Hunner has not yet convinced the profession as to the frequency of the ureteral stricture, but he certainly has done some very interesting and original work on the subject.

In pyelography it is necessary to have the earnest coöperation of the roentgenologist, and the cystoscopic room should be fitted with an x-ray stand. I think it is of prime importance from the patient's standpoint, to have everything in readiness so that no delay in taking the pictures after the injection will be necessitated. Frequently it will be necessary to keep the patient on the table while the pictures are developed, in event of failure, that others may be taken, as a patient looks forward to another session with anything but pleasure.

Since the use of the Potter-Bucky diaphragm there has been a great improvement in the quality of kidney plates taken.

Renal Function: Before any operation on the kidney is performed, it is necessary to know if there is a mate to this kidney, and if so, whether its function is great enough to carry out the elimination of the waste products of the body; also it is frequently desirable to know whether the kidney to be operated upon has a function sufficient to justify preserving it. The extent of our surgical procedures will at times be guided by the knowledge gained by the differential function.

The phenolsulphonephthalein test has come to be almost universally adopted for this work. It has replaced nearly all the earlier tests such as phloridzin, methylene blue, indigocarmin, and electrical conductivity of the urine, until to-day only one of these, indigocarmin, has survived. In 1910 Rowntree and Geraghty discovered this test while Able and Rowntree were trying to discover a laxative which could be used hypodermatically. It was found that the phthaleins and their derivatives were eliminated almost entirely by the kidneys. This test was perfected, and as we have it to-day, combined with ureteral catheterization, we can tell in a few minutes whether a kidney is functioning or not, or whether its function is great enough to sustain life. In the hands of the practitioner, we have a simple test which is efficient and reliable and can be determined without complicated laboratory procedure.

The indigocarmin test may help to show us the ureteral opening in difficult cases, but certainly has no other advantage over the phenolsulphonephthalein test.

Progress has been made rapidly in urology, due to the perfecting of methods, instruments and the x-ray machine, but it has only been achieved by the closest coöperation of the roentgenologist and laboratory worker, combined with most careful attention to clinical symptoms. It has, indeed, been fortunate that a few men have had the wisdom and perseverance to forge ahead, overcoming the obstacles, one by one, until to-day urology is on a sound footing, and urological conditions can be as correctly diagnosed as those in any branch of medicine.

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TREATMENT OF THE SMALL URETERAL CALCULUS*†

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Stone in the ureter is probably responsible, more than any other condition, for errors in diagnosis of indefinite abdominal pain. Especially is this true if the pain is on the right side. Probably more needless surgery is done because the condition is not recognized, or if recognized, surgery is employed too early.

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†With Lantern Demonstration.

The symptoms of stone in the ureter are so bizarre that they are easily confused with the symptoms of other abdominal conditions, and to differentiate them is at times extremely difficult. As pain is the most common symptom, and as it may radiate in any direction, and is almost always at some time during the attack associated with nausea and vomiting, it is easily understood why errors in diagnosis are so common.

This paper is based upon a careful study of fifty-six cases. In twenty-nine cases a correct diagnosis was made by the referring physician. This includes six patients who previously had their appendices removed, and three patients who previously had either one tube or ovary removed.

In twenty-seven cases, then, the diagnosis by the referring physician was in error, or to be exact, twenty-one had an erroneous diagnosis made, and six were referred without diagnosis. Nine cases were referred with a diagnosis of appendicitis, two for tubal or ovarian trouble, two for hernia, two for prostatitis, two for inflammation of the bowels, one for obstruction of the bowels, one for diverticulitis, one for gall-bladder, and one for cystitis.

Probably some of those who previously had their appendices or tubes or ovaries removed did have appendix or tubal or ovarian trouble, but if such was the case operation did not give the desired relief from pain.

The foregoing citation will suffice to emphasize the fact that no patient suffering from indefinite abdominal pain should be operated on until a careful urological study has been made.

TREATMENT

When the diagnosis of stone has been made what procedure should we follow? Is the case one for conservative or surgical treatment?

During the past few years the general trend has been toward conservatism unless there are present certain definite contraindications for waiting. Fifteen to twenty-five per cent of stones will pass unaided if given time, and about twice as many will pass if aided by ureteral manipulation. Braasch in a recent article emphasizes the necessity of conservatism. He says: "The majority of stones will probably pass within three or four months following the first symptom. It may be stated, therefore, that it is usually inadvisable to operate for a stone in either kidney or ureter until at least three and possibly six months have elapsed since the onset of symptoms. Immediate operation for stone following the first or second attack of pain without evidence of other complications is strongly to be condemned."

A stone is dangerous to the patient only in proportion to the amount of obstruction or infection which it produces. We should know from our examination of the patient whether or not the stone is producing obstruction to the flow of urine, and the amount of infection present, if any.

Most men agree that a stone greater than 1 cm. in size is very difficult to pass even with ureteral manipulation or instrumentation. Many of us have seen larger stones that were passed unaided but these were exceptions. The location of the stones should be taken into consideration. A stone in the lower ureter, unless it is producing obstruction or there be present marked infection, should not be treated surgically until all other means have been exhausted.

The shape of a stone should also be taken into consideration. A round stone measuring, say, 1 cm. in diameter would be more difficult to pass than if it were elongated and measured 1 or even 2 cm. in length, and less than 1 cm. in width. A smooth stone will pass more easily than one with rough or sharp edges.

A large stone impacted in the ureter and producing obstruction, especially if infection is present, should be treated surgically at once. Otherwise the kidney will be completely and permanently damaged. A large stone may interfere very little with the flow of urine, whereas a small stone may completely block the ureter. This is true where strictures or anomalies exist. While strictures or anomalies play but a small part in the management of ureteral stone, they nevertheless are to be watched for.

The size, location and shape of the stone, the amount of obstruction and infection, and the condition of the patient, then, should be our guide as to whether treatment should be surgical or conservative.

What do we mean by ureteral manipulation or instrumentation? Simply the passage through the cystoscope, of ureteral catheters, dilators or especially devised instruments, with the hope of getting by the stone or grasping it. Such drugs as lubricants or local anesthetics may be employed at the same time. Many methods are in vogue. Each one doing this work has perfected some little trick of his own with which he is familiar and with which he is successful.

Bugbee has a method of inserting soft ureteral catheters in such a manner as to wind them around the stone, thereby obtaining considerable traction.

Braasch and his associates employ a similar method, but they depend upon dilatation of the ureter by the prolonged indwelling ureteral catheters, inserting as many as three at one time through a specially devised catheter guide.

Crowell uses catheters, metal dilators, and a local anesthetic, the latter to produce relaxation and lessen spasm. He says that once he is by the stone he is master of the situation.

Our method is to attempt to get by the stone with a No. 5 or No. 6 ureteral catheter, and to follow this by a second catheter of similar size, allowing both to remain in place for twenty-four or forty-eight hours. If the stone is dislodged, all the better. The procedure is repeated in a few days if subsequent attacks of colic have not caused the stone to pass. Usually after two or three such manipulations the stone passes.

It is advisable between treatments to x-ray the patient to determine whether the stone has passed or changed its position.

Shortly after treatment many stones are passed without the patient's knowledge. It is also surprising how well most patients tolerate this treatment, and the notable absence of pain while the indwelling catheters are in place. Small doses of morphia usually completely control the pain. The patient between treatments is encouraged to be up and walking, and if his home is not too far distant he is allowed to leave the hospital. In a few cases the ureteral orifice was so contracted that it was difficult to pass even a No. 4 catheter. These we dilated, passing a Garceau catheter as far as possible.

Various oils have been advocated to facilitate the passage of stones. Many anesthetics, such as procain, novocain and papaverin, have been used to produce anesthesia and relaxation of the walls of the ureter. Just what they accomplish we cannot say. We believe that dilatation and changing the position of the stone is of more importance than the injection of oils or anesthetics. These do no harm, however, and may facilitate the passage of the stone.

When obstruction or infection, or both, are present, once the catheter has passed by the stone, we are masters of the situation in so far as these complications are concerned. Drainage is immediately established and the infection can be treated by lavage through the catheter. In one case we allowed a catheter to remain in place five days, washing out the kidney pelvis twice daily. The patient was entirely free from pain and the infection cleared up rapidly.

In one case the stone was lodged in the ureteral orifice and was grasped by forceps through the cystoscope. In two cases the stone had become lodged in the urethra and was removed by forceps.

Just what factor anomalies or strictures of the ureter play in the management of ureteral stone is difficult to say. Three such cases have come under our care.

In June, 1921, a young man was referred to us with a diagnosis of renal colic. X-ray showed a shadow in the right kidney region the size of a nickel, and a very small shadow in a like location in the left side. The urine from the right side was heavily loaded with pus and the left side was negative. Pyelography showed the stone to be at the ureteropelvic junction; there was moderate dilatation of the pelvis and clubbing of all calices. A right pyelotomy was done and the stone removed. The patient made an uneventful recovery. Seven months later he was again referred to the hospital, this time with a diagnosis of left renal colic. X-ray showed the same shadow on the left but in a slightly different location. Urine from the right side was negative, the former infection having already cleared up, while the urine from the left side contained many pus cells. He was given three weeks to pass the stone. Inasmuch as during this time the pain was becoming more severe and the infection increasing, operation was advised and a fibrous band the size of a heavy fish line was found running across the ureter at the ureteropelvic junction. Just why this band had not caused obstruction to the flow of urine, but had prevented the small stone from passing, we do not know. There was no obstruction to the catheter at either time it was passed.

In two cases the shadows remained in the same position following several attempts to remove the stone by ureteral manipulation. After vigorous dilatation with a Garceau catheter the stones were passed. Just whether these cases were true stricture or whether the stones had been caught in a fold of mucous membrane, we do not know, but nevertheless the stones passed immediately following dilatation.

While postoperative stricture is rare, nevertheless it does occur and should be considered in a patient who has had a ureterotomy done. During the past year we have had two cases of definite postoperative stricture following ureterotomy for removal of stone. One of these cases had been operated on by us two years before and the other had been operated on elsewhere. The pain was so severe that both were sure they had a recurrence of their former trouble.

A recent experimental work of Rosenow, Bumpus, Meisser and Keyser, of the Mayo Clinic, in producing infection of the urinary tract, by injecting streptococci obtained from diseased teeth and tonsils of patients suffering with infection, is familiar to all.

Braasch in a recent article says: "It seems logical to conclude that, since bacteria are the direct etiologic factors in the formation of cholecystitis and gall-stone, as shown by Rosenow, they should also be etiologic factors in the formation of urinary stones. Streptococci obtained from culture of the urine of a patient suffering from recurring lithiasis and injected into the pulps of teeth in six dogs caused the formation of renal stone in five. In any event, it would seem logical to conclude that infections of the teeth and tonsils should be regarded as very probable factors in the cause of lithiasis, and should be carefully removed in order to prevent recurrence."

Realizing the significance of this experimental work and appreciating the advantage to the patient of having all foci of infection eliminated, we subject all patients to thorough examination and if such foci be present, strongly advise their removal not only from the standpoint of the urinary tract but also of the general health.

The success of nonoperative treatment depends usually upon two things: the patient's willingness to coöperate, and the surgeon's willingness to carry out the treatment. Certain patients do not tolerate ureteral manipulation. They have severe reaction, chills and fever following. These cases should be treated surgically. If, after several attempts to remove the stone, x-ray shows no change in its position, then it should be removed surgically.

In view of all the disadvantages that nonsurgical treatment entails, it has many advantages over surgical. The patient is only required to remain in the hospital a few days; very often he can be about his business between treatments. The patient avoids a major operation and the dangers associated with it. The patient does not require a general anesthetic to have nonsurgical treatment carried out; local, or, in some cases, sacral anesthesia is all that is necessary.

In this series of fifty-six cases, forty-nine were treated nonsurgically and seven surgically. In forty-two of the nonsurgical cases we have definite proof that the stones did pass. In the remaining seven we have no knowledge of their present condition.

THE TREATMENT OF ACCIDENTAL OCCLUSION OF THE URETER*

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In writing of surgical injury of the ureter, most authors regard the accident as exceptional. Nearly all are in accord in believing unilateral injury unusual and bilateral damage exceedingly rare. The belief set forth by individual writers is an expression of personal experience and, with respect to frequency, not wholly consistent with facts. Only a few papers have been written which have reviewed the subject in more than a superficial way. Most of the papers presented have been case reports with the personal views of men relating to special features of ureteral damage. The large number of cases previously recorded have not been thoroughly correlated. Recently a few papers have appeared, notably one by Herman, recording a series of 24 bilateral cases. Barney has reported sixty-two cases, including thirty-two presented by Sampson in 1902, and Oeconomos has chronicled a series of 159 cases. In this presentation we were able to collect from the literature 316 cases and we have gathered 125 additional cases from men active in abdomino-pelvic surgery. These figures give a combined total of 441 cases, the largest number compiled in a single paper thus far presented. Even with this large array of cases collected, probably there are a large number of others which have not been recorded and still others which have not been recognized. This should make a compelling appeal for faithfully recording not only accidents of the ureter, but other surgical accidents as well. Should we not be just as zealous and honest in exposing our tragedies as we are in recording our triumphs?

To emphasize the frequency of ureteral injury, I wish to quote from a paper now in process of preparation which covers various features of the subject. In preparing material for this contribution we were able to collect from the literature 316 cases, of which 58 were bilateral (including the 24 cases reported by Herman) and 258 unilateral. To these we have reports from 51 surgeons in various parts of this country. Nine of these men have had no personal cases, but have seen cases in consultation or knew of cases in the practice of their contemporaries. Forty-two surgeons report 125 cases, ranging from one to eight, with an approximate average of three each. Of this number 23 were bilateral and 102 were unilateral. The above combined aggregate 441 cases, of which 81 were bilateral and 360 unilateral. These we believe represent the largest collection of cases hitherto recorded; the previous largest collection, 159 cases, being reported by Oeconomos in 1914.

Despite the prevailing conviction that ureteral damage is rare, we believe it to be one of the most, if not the most frequent, as well as the most serious accident of pelvic surgery—frequent because confirmed by the large number of cases we have been able to collect; serious because often associated with kidney destruction, and still more serious because it carries a higher mortality than any other accident of pelvic surgery.

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With respect to the frequency of ureteral injury as a complication of pelvic work, Montgomery states that it is comparatively frequent and more so than generally assumed. The latter part of this statement meets with affirmation in 90 per cent of the replies we received to a questionnaire relating to this phase of the subject. MacGonigale states that ureteral injury is one of the common accidents of gynecological operations. Caulk and Fischer speak of the accident as frequent and much more frequent than generally believed. Sampson, in one of the first analytical papers on ureteral damage, claims that the injury, either in the form of ligation or clamping, "is of common occurrence during gynecological work;" and he believes, furthermore, that many cases, either in the form of occlusion or injury, occur which are never recognized.

Owing to the present mode of exposing the ureter by free dissection—the technique usually followed in deep pelvic operations to-day—ureteral occlusion or ureteral damage is perhaps not so frequent as it was a decade or two ago, an era when "suppression of urine" was not infrequently cited as a cause of death. Probably a certain percentage of deaths following hysterectomy, both vaginal and abdominal, and other extensive pelvic operations, in which the cause of death was ascribed to suppression of urine, were actually due to ureteral occlusion. Postoperative urinary suppression, in the true sense, formerly not infrequently designated as a cause of death, now is rarely mentioned. We are extremely doubtful of the existence of this trouble as a postoperative entity. Even the case of anuria and death following unilateral ligation recorded by Barney may have had its origin in injury of the opposite ureter or in preëxisting renal disease. In unilateral experimental ligation of the ureter performed upon thirty-seven animals, the reno-renal reflex, as evidenced by anuria, did not occur in a single instance (Barney).

Many years ago Dr. Kelly asserted that injury of the ureter was a common accident of pelvic surgery, and MacGonigale, in his contribution on "Injuries of the Ureter," presented before the American Gynecological Society in 1899, stated that injury of the ureter during extensive operations on the pelvic and abdominal organs was "comparatively frequent." This author also claims that injury was most commonly inflicted during vaginal hysterectomy. This method of extirpating the uterus still exacts a toll, but not to the extent it did a decade or two ago. Abdominal hysterectomy, especially for carcinoma of the uterus, is indubitably the operation most frequently responsible for the injury to-day. With improvement in the technical steps of the vaginal procedure, as practiced at the present time, ureteral damage is not nearly so likely to occur, and nearly all authorities are in accord in the belief that the radical abdominal procedure exacts a greater toll of ureteral damage than even the method of vaginal removal as practiced two decades ago.

Every deep pelvic operation carries the potential hazard of ureteral injury, and all surgeons doing deep pelvic work are keenly conscious of the damage to which the conduit is constantly exposed.

The anatomical position of the tube exposes it to unusual jeopardy in nearly all operations in the dependent part of the pelvic cavity. The renal section of the tube, however, is not immune to damage, for even in this area, as in the case of renal fixation mentioned by Kelly, ligation or clamping has occurred. The section most frequently exposed to the vicissitudes of surgery is that extending from the pelvic brim to the bladder insertion.

On the right side, the suprapelvic portion and also the section about the pelvic brim are jeopardized during operations upon the appendix, the cecum and even upon the kidney itself. In the midpelvic region it is exposed to damage during operations upon the fallopian tubes for pelvic inflammatory disease, for intraligamentary cystomas and for retroperitoneal neoplasms, both benign and malignant. However, accidents above the cervical section are rather exceptional. It is the cervical area by far which most frequently is involved in accidental injury, and this occurs most commonly in applying clamps or ligatures to the uterine vessels during the course of radical hysterectomy for carcinoma. This section also is the most frequent site of injury in vaginal hysterectomy, especially as formerly performed by progressive ligation or clamping from below upward. In the modern vaginal hysterectomy of inverting the fundus and ligating or clamping the broad ligaments with their vessels from above downward, accidental damage, while it may and occasionally does occur, is not nearly so likely as in the technique formerly in vogue.

In order to compile a comprehensive article on the treatment of accidental occlusion of the ureter, the writer felt the necessity of incorporating other phases of the subject, such as its frequency, causes and results. This plan has been adopted.

FREQUENCY

The frequency of this unfortunate surgical complication needs emphasis. In this connection certain facts and figures compiled by various authors will be submitted. Sampson, in his exhaustive paper describing the accident, from the admission of the first patient to the gynecological department of Johns Hopkins Hospital, August 17, 1889, until August 17, 1902, a period of thirteen years, found that there were admitted 9,850 patients. Of this number 7,763 were operated upon. The major operations, including vaginal sections, abdominal operations and operations upon the kidney, totaled 4,086. In the various operations classified as gynecological, the ureter was damaged, clamped or ligated in sixteen instances, as follows:

50 abdominal hysterectomies for cervical carcinoma	3	times
26 combined vagino-abdominal hysterectomies for cervical carcinoma	1	"
63 vaginal hysterectomies for cervical carcinoma	3	"
516 hysterectomies for myomas	4	"
276 hysterosalpingo-oöphorectomies for pelvic inflammatory disease	2	"
63 operations for vesicovaginal fistulæ	1	"
100 nephropexies	1	"
1 combined abdomino-colpo-hysterectomy for cancer of the vagina	1	"

In all there were thirty-two ureteral injuries.

As regards the type of damage inflicted, it was found that the tube was clamped or ligated, embracing the table given above, sixteen times. A portion of a tube was intentionally excised six times. It was completely divided three times and partially severed three times. Cutting off the blood supply followed by necrosis, with ureterovaginal fistulæ occurred seven times. There were 139 hysterectomies for cancer of the cervix and uterus and nineteen of the thirty-two injuries recorded occurred during these operations. In ten the trouble was not discovered until after the operation, and seven of these, as previously mentioned, resulted from ureteral necrosis.

H. Kayser, in studying the histories of ureteral injury in the clinic of Professor Franz, Charitie Hospital, Berlin, for five years, from 1910 to 1915, found recorded twenty-nine instances of primary and secondary ureteral damage.

Twenty-four of these occurred in the hospital, and five cases were referred from the outside. Two cases resulted from damage inflicted during labor and both patients developed uretero-vaginal fistulæ. One case followed vaginal hysterectomy for uterine carcinoma. Twenty-six occurred during the radical operation of Wertheim for cervical carcinoma, one being a case of recurrence. This report reveals twenty-five accidents (nineteen per cent) in 126 radical hysterectomies, as compared with nineteen accidents, (fourteen per cent) in 139 hysterectomies as recorded by Sampson.

These figures are somewhat higher than those reported by Wertheim who, in 500 radical hysterectomies, had 49 ureteral injuries or 10 per cent.

Further to emphasize the frequency of accidental ureteral damage, Barney, in searching the literature to compare the results of experimental ureteral ligation with clinical results, reported thirty instances of unilateral injury to which he added the thirty-two cases previously reported by Sampson, a total of sixty-two; and T. S. Burr, in his presentation on ureteral damage, refers to 630 hysterectomies for uterine carcinoma in which the bladder was injured nineteen times, a single ureter ten times, the bladder and one ureter three times and both ureters once.

SIDE AFFECTED

In compiling our figures it was of absorbing interest to study the relative frequency of injury of the two sides.

In 258 cases of unilateral damage the right side was the seat of injury in 98 cases and the left side in 101 cases. In the remaining 59 cases the side affected was not mentioned.

In the combined total of 360 unilateral cases, the right side was affected in 132 cases and the left side in 131 cases. In 97 cases the side injured was not mentioned.

From the foregoing one may assume that ureteral damage is about equal on the two sides.

As previously mentioned, in addition to the unilateral cases there were 81 cases in which the injury involved both sides. In this connection it may be of interest to report the personal experience of the writer. During the past fifteen years he has injured the ureter on five different occasions and he assisted Dr. E. E. Montgomery in performing a double ureterovesical anastomosis for bilateral ureteral occlusion.

Case 1.

The first patient on whom the injury was inflicted, was operated upon for advanced carcinoma of the cervix. The operation was performed fifteen years ago. A radical abdominal hysterectomy was performed. Ten days subsequently a ureterovaginal fistula was discovered. Examination disclosed the right ureter severed. Three months after the primary operation, the vaginal vault, in accordance with the plan of the late Dr. X. O. Werder, was converted into a part of the bladder cavity.

The patient made a complete recovery and is living and well to-day.

Case 2.

This patient was operated upon for extensive carcinoma of the cervix and a radical Wertheim hysterectomy was performed. Two weeks following the abdominal operation, urine escaped into the vagina and a ureterovaginal fistula was found. Examination revealed the left ureter as the seat of trouble. Two months later the abdomen was reopened with the view of implanting the ureter into the bladder or performing a ureteroureteral anastomosis. Owing to the presence of dense adhesions about the ureteral stump, considerable damage was inflicted during its liberation. This, together with obvious signs of infection, led us to abandon the plan of anastomosis. A nephrectomy was performed. Convalescence of this patient was not disturbed. She left the hospital on the 25th day after operation. She is still living and well.

Case 3.

The third patient was also operated upon for carcinoma of the cervix. The uterus was removed in accordance with the plan advocated by Wertheim and the usual course of dissecting out and protecting the ureters was followed. Before peritonizing the cervical stump and the stumps of the pelvic ligaments, the routine plan pursued by the writer of making a final inspection of the ureters, was carried out. This disclosed the right ureter normal. The tube upon the left side, just where it is traversed by the uterine vessels, was found almost completely severed. The severed ends were attached to each other by a ribbon-like band. The tube had evidently been incised with scissors in cutting the uterine vessels. The various methods of correcting an injury of the type mentioned were considered. The choice of operation appeared to resolve itself either into a ureteroureteral or a ureterovesical anastomosis. Owing to the small size and undilated condition of the damaged tube, the latter recourse was adopted. The recovery of the patient was not further complicated and she left the hospital at the end of the third week. She survived the operation eighteen months, finally succumbing to recurrent malignant disease. This case emphasized the fact that in spite of every possible precaution ureteral damage may still be inflicted.

Case 4.

In the fourth patient the left ureter was incised, but not recognized, during a hysterosalpingo-oöphorectomy for extensive pelvic inflammatory disease. A uretero-abdominal fistula appeared on the fourth day. The patient died on the sixth day, of septic peritonitis.

Case 5.

This patient was operated upon for complete prolapse of the uterus. A vaginal hysterectomy was performed. The uterine vessels on the left side retracted and considerable difficulty was experienced in securing them by ligation. In endeavoring to obtain hemostasis the left ureter was pinched with a hemostat or partially occluded in a ligature. Two weeks following operation, urine was discharged from the vagina and a left ureterovaginal fistula was discovered. This patient was kept under observation and at the end of three months the damaged ureter had closed spontaneously. This case occurred quite recently and the patient is reported well.

Case 6.

The sixth patient was operated upon by Dr. E. E. Montgomery for advanced cervical carcinoma. A radical abdominal hysterectomy with wide excision of the parametrium was performed. Both ureters at the site where they are crossed by the uterine vessels were ligated and severed. The accident was not recognized at the time. Complete anuria followed the operation. Thirty-six hours subsequently the abdominal incision was reopened. The stump of the cervix was exposed and the incised ureters liberated and deligated. A double ureterovesical anastomosis was performed. The convalescence of the patient was surprisingly mild. She survived the operation without any urinary disturbance for one year, finally dying of recurrent malignancy.

TYPE OF OPERATION IN WHICH URETERAL INJURY MAY BE INFLICTED

While hysterectomy, either abdominal or vaginal—but more commonly the former—is largely responsible for ureteral injury, there are a great many other surgical procedures on which responsibility may be placed. A tabulation of operations—twenty-four in all—in which the accident has occurred, will be given.

In order of frequency they may be summarized as follows:

1. Radical abdominal hysterectomy, (Wertheim's method for cervical carcinoma).
2. Radical vaginal hysterectomy, (Shauta's method for cervical carcinoma).
3. Combined vaginal and abdominal hysterectomy for cervical carcinoma.
4. Vaginal hysterectomy (clamp method for uterine conditions other than carcinoma).
5. Total abdominal hysterectomy for uterine myomas, especially if adherent and associated with intraligamentous growths.
6. Operations for the removal of intraligamentary cysts.
7. Subtotal hysterectomy (supravaginal) for myomas, especially if adherent or complicated by intraligamentary neoplasms.
8. Hysterosalpingo-oöphorectomy for extensive pelvic inflammatory disease.
9. Herniotomy, especially if complicated by congenital or acquired malposition of the bladder and ureter. (Corlies in 1904, reported eleven such cases, six inguinal and five femoral) (Herman).
10. Operations for the removal of vesical neoplasms.
11. Surgical correction of vesicovaginal fistulæ.
12. Operations upon or in the region of the kidney itself.
13. Poro operation (Two cases are included in this paper).
14. Operations upon or about the appendix and cecum.
15. Operations upon or about the sigmoid and rectum.
16. Operations for removal of retroperitoneal pelvic tumors.
17. Extensive plastic operations upon the anterior vaginal wall, especially for uterine prolapse.
18. Perforation of the ureteral wall in passing the ureteral catheter. (See case reported by Noble in this paper.)
19. Operations upon a horseshoe kidney or where double ureters exist.
20. Trauma of the ureteral wall from undue manipulation or from damaging the blood supply, followed by necrosis in various pelvic operations.
21. Kraske's operation for rectal carcinoma.
22. Percy's method for treating uterine carcinoma.

23. Ureteral injury sustained from the application of radium (Baldwin's case).
24. Instrumental labor.

The operations in which the accident was sustained in 61 bilateral cases were mentioned in 58 as follows:

Abdominal hysterectomy	40	times
Vaginal hysterectomy	6	"
Supravaginal hysterectomy	4	"
Percy cautery	3	"
"Pelvic operation"	3	"
Oöphorectomy	2	"

In 258 unilateral cases the operations ascribed as responsible for the injury were:

Abdominal hysterectomy	164	times
Vaginal hysterectomy	32	"
Salpingo-oöphorectomy	19	"
Myomectomy	9	"
Combined vaginal and abdominal hysterectomy	4	"
Sacral hysterectomy	4	"
"Laparotomy"	1	"
Posterior colpotomy	1	"
Poro operation	1	"
Type of injury not stated	23	"

TYPE OF INJURY

The type of injury is variable, depending somewhat upon the character of the operation. The most frequent forms of injury are: 1, ligation, 2, incision, 3, excision, 4, necrosis following the manipulation or cutting off the blood supply.

The injury may involve one or both ureters and it may be partial or complete. Damage has also been inflicted by heat in applying the Percy cautery and partial destruction of a ureteral wall followed the application of the electrothermic angiotribe, as in the case recorded by Fisher. Indirect damage with necrosis and fistula formation results from undue manipulation and from destruction of the nutrient vessels. Wertheim, in sixty hysterectomies for cervical carcinoma in which the ureters were exposed for a considerable distance, records five ureterovaginal fistulæ, two of which were bilateral. These Wertheim believed represented necrosis from cutting off the blood supply. In some cases a moderate or even a large section of the tube may be completely excised. Radiotherapy also has a place in the etiology of ureteral damage. A case, mentioned by Baldwin, is recorded in this presentation.

In 52 bilateral cases in which the type of injury was mentioned the ureters were ligated, severed, clamped or damaged as follows:

Ligated	34	times
Ligated and severed	15	"
Clamped	3	"

In 258 unilateral cases the type of injury was mentioned in 207 as follows:

Severed	100	times
Ligated	48	"
Clamped	19	"
Damaged	16	"
Excised	8	"
Torn	7	"
Partially severed	3	"
Punctured	3	"
Obstructed by scar tissue	2	"
Perforated by ureteral catheter	1	"

RESULT OF OCCLUSION AND INJURY

The results of accidental occlusion or injury of the tubes will depend naturally upon the type and extent of the damage. Robinson summarizes the results of this unfortunate surgical accident as follows:

A. *Bilateral:*
  1. Double section followed by leakage, general infection and death.
  2. Double ligation with anuria and uremia; fatal if unrelieved.

B. *Unilateral:*
  1. Section followed by leakage and acute infection, either local or widespread.
  2. Partial section with subsequent leakage and fistulæ formation, either uretero-abdominal, but more likely ureterovaginal.
  3. Ligation, followed by atrophy of the kidney with or without symptoms of renal inadequacy. In some cases acute or chronic uremia.
  4. Ligation with reflex suppression and complete anuria. (1.6 per cent. Barney.)

C. *Partial Occlusion* or kinking from peri-ureteral adhesions following various abdominopelvic operations.

In analyzing the summary, as outlined, a qualifying statement is called for. Experimental and clinical data disclose that not all cases of ureteral damage, whether the result of section, ligation or necrosis, are followed by sepsis or peritonitis. The most frequent ultimate result is the formation of urinary fistulæ. These may arise in the abdominal wound, but fistulæ in the stump of the vagina are by far the most common. It may not be out of order to state also that not all cases of ureterovaginal fistulæ are permanent. A certain percentage heal spontaneously and a similar result may ultimately occur even in the uretero-abdominal type.

As regards peritoneal infection following ureteral damage, Barney and others have demonstrated, both experimentally and clinically, that the peritoneum is unusually tolerant to the ingress of urine and that peritonitis is the exception rather than the rule, provided the urine be allowed to come in contact with the peritoneum for a short time only. Barney, in his experimental work on herbivora, found that peritoneal infection when it occurred was nearly always localized. On the other hand, it was determined that in carnivora, infection may be localized, but is more likely to be generalized and purulent. The author quoted, collected twenty-nine clinical cases of injury of the ureter with drainage into the peritoneal cavity. Twenty of these he accepted as proved cases, proved either by secondary operation or by autopsy. Nine cases he classed as doubtful. The mortality of the proved cases was 25 per cent, and of the doubtful cases 11 per cent. The cases reported occurred during the course of a laparotomy, usually a hysterectomy, salpingectomy or appendectomy. Barney, from his investigation clinically and experimentally, concluded that the peritoneal cavity of man, while varying in susceptibility to irritation and "standing midway between the herbivora and carnivora in reaction to urinary inundation, will bear without damage, indeed even in some cases without severe reaction, the effusion of a certain amount of sterile urine." It was further found that the peritoneum was able to guard itself very effectually against urinary effusion by the formation of adhesions.

In animal experimentation it was quite evident—and probably this is also true more than is realized in man—that a divided ureter soon becomes harmless by occluding adhesions and organizing blood. It is in those cases in which prompt occlusion does not occur, as observed frequently in experimental work on dogs, especially if the urine be septic from the start, that a generalized peritonitis develops. In most instances one can safely assert that the first sign of ureteral damage, if unrecognized at the time of operation, is the discharge of urine through the abdominal wound or more likely through the vaginal vault. Fistula formation, then, may be regarded as the most usual ultimate result of ureteral damage, although results still more remote may involve the kidney pelvis or even the kidney parenchyma. In certain cases the first evidence of injury may be an accumulation of fluid within the abdominal cavity, with or without a urinary abscess. Occasionally a severe peritonitis supervenes at once, but the cause of this may be discovered, as has been frequently noted, only by a secondary abdominal operation or at autopsy.

TREATMENT

The writer, in preparing this paper, found so much material of varied and unusual interest that he became anxious, probably overanxious, to present an article which would prove not only of some value and help to the members and guests of our State Society, but one which would have abiding merit for future reference. In so doing he has digressed considerably from the title. We now come, though somewhat late, to the heart of the subject originally assigned to me, namely, the treatment of accidental occlusion of the ureter.

Even in considering this phase of the topic it was found essential to include other features of ureteral injury. We have, therefore, in the line of necessity not only included accidental ligation or occlusion, but ureteral damage and ureteral fistulæ also, which, for the most part, represent sequelæ of occlusion.

In presenting the therapeutic phase of ureteral injury the cardinal question, because the most important, of prophylaxis arises.

Indubitably a large number of ureteral injuries may be prevented by adhering to certain fundamental rules in carrying out the technical details of deep pelvic operations, especially the radical operation of hysterectomy.

Under prevention or prophylaxis, I should place first, the imperative need of routinely dissecting out and isolating the ureters in accordance with the technic devised by Wertheim, not only in his method of extirpating the uterus, but in all other extensive pelvic operations as well.

In radical vaginal hysterectomy ureteral damage may be reduced to a minimum if not almost wholly overcome by inverting the fundus and ligating the broad ligaments with their vessels from above downward, instead of ligating from below upward, as in the technic formerly employed.

The insertion of indwelling ureteral catheters immediately before starting either procedure, long ago advocated by Kelly, provides an additional safeguard against ureteral damage.

Whenever doing a complicated hysterectomy, either incomplete or complete, or in fact in performing any deep pelvic operation, it is our custom to include in the technical steps of our work the isolation of the urinary conduits. Vaginal hysterectomy we rarely perform by the orthodox technic of ligating from cervix to fundus, but from fundus to cervix, at least whenever this is possible. Reference has been made to the importance of dissecting out and isolating the ureters as a prophylactic procedure in all forms of deep pelvic work. This course, we believe should be followed always. This expedient is not only logical, but perfectly feasible. We are now led to the consideration of certain phenomena by which the ureters may be identified.

MEANS OF IDENTIFYING THE URETERS

In abdominopelvic work one should keep in mind certain features by which ureteral identification is made easily. Several important points of identification are mentioned. It seems quite in order to name them here:

1. The vermicular or peristaltic test excited by gently stroking the tube. This when observed is regarded as pathognomonic. (Kelly's Test.)
2. The absence of bleeding when the ureter is incised. This, of course, one would not deliberately do to identify the duct, but is obvious when done accidentally.
3. The consistence and thickness of the ureter, thicker and harded than a vein, thicker, but softer than an artery.
4. The absence of pulsation.
5. The yellowish-white hue of the tube.
6. The changing contour of the tube, flat and ribbon-like while at rest, tubular or cylindrical when in action.
7. The relation of the tube to certain anatomical landmarks.
8. At the pelvic brim it dips into the pelvis in traversing from without inward the iliac vessels.
9. The abrupt upward curve assumed as the tube approaches the side of the cervix.
10. The inward curve assumed as the tube approaches the bladder wall.
11. The horizontal course of the uterine vessels in front of the ureter as they approach the side of the cervix.
12. The constant tendency of the tube to adhere to the sacral, inner or posterior leaflet of the peritoneum. (This tendency is never displayed by blood vessels.)
13. Identification, as already mentioned, by inserting indwelling catheters immediately before starting operation.
14. Finally, differentiation between the ureter and the remains of the hypogastric artery must be kept in mind. The artery, followed backwards, leads into the anterior division of the internal iliac artery. The ureter, on the other hand, travels over the pelvic brim and the iliac vessels into the renal fossa.

By adopting the plan of making every possible effort to identify and isolate the ureter, occlusion or damage should very rarely occur.

ACTIVE TREATMENT

The treatment of the actual condition when encountered and recognized at the time of operation calls for immediate correction. No other procedure should be countenanced nor is any other worthy of consideration. If clamps or ligatures have been accidentally applied, they should be removed at once. Clamps or ligatures applied for a short time do not, as demonstrated by Sampson and others, seriously jeopardize the integrity of the ureteral wall. However, if at the point of ligation or clamping impairment of the ureteral wall is observed, a safer expedient is found in excising the point of damage and performing a ureterovesical or a uretero-ureteral anastomosis. This appears to us as an infinitely more rational recourse than—as has been done occasionally—ligating the damaged tube and trusting to renal atrophy. Ligation is a sacrificial operation and should stand subordinate, therefore, to the methods of anastomosis already mentioned. With the prospect—and fairly good prospect too—of conserving the corresponding kidney, the former procedures invariably should receive first consideration.

Since ligation is a sacrificial operation, resulting in the destruction of the corresponding kidney, there are, besides this objectionable feature, still others to which objections may be made. The possibility of a ligature subsequently "cutting through" or causing necrosis with fistula formation, or worse, fatal peritonitis, are additional hazards to be borne in mind. The first-named unfortunate result, according to Herman, occurred in a case reported by T. S. Burr. Frankel reported a like result and Blumenfield observed a similar calamity.

Caulk and Fischer advocate early deligation in order to save the corresponding kidney or, if the abdominal or systemic condition of the patient be unfavorable, nephrostomy with a like end in view. These authors have demonstrated experimentally that either course should be adopted promptly. They found in their experimental work that two weeks after a one-sided ligation the corresponding kidney suffered serious injury and at the end of four or five weeks irreparable damage. Ligation resulting from the application of catgut requires, as has been shown, considerable time for absorption.

Caulk and Fischer in their investigations demonstrated that No. 2 plain catgut in the pelvis is not absorbed in less than three weeks and chromic catgut persists, perhaps, for a longer period.

To anticipate, then, the absorption of catgut means death from uremia in bilateral ligation or destruction of the kidney in unilateral ligation, unless the occluded tubes be released or urinary exit provided by nephrostomy. This operation has been successfully performed several times. In one case reported by Judd ureteral function was resumed seven days after the operation. Caulk and Fischer record a case of restoration of ureteral function fifty-eight days after ligation.

It is hardly necessary to emphasize, then, the importance of early deligation. This should be done not only to save the corresponding kidney, but to evade the possibility of necrosis with rupture, fistula formation or peritonitis, although it is only fair to point out that the integrity of the ureteral wall may be preserved for some days even though ligated. Barney mentions three cases of one-sided occlusion in one of which deligation was performed six days following operation with restoration of ureteral function. In another case occlusion was present for ten days. Deligation was performed and, although the corresponding kidney was found somewhat hydronephrotic, renal function continued with excretion of clear urine for five years subsequently. The third case was occluded for five days. Functional restoration followed deligation immediately.

Johnson, as pointed out by Herman, has demonstrated experimentally that function even may be restored after two weeks of occlusion, but from the data previously submitted it would be extremely unwise, it seems, to delay matters so long.

In bilateral occlusion a corresponding course is to be followed: deligation as soon as possible, supplemented, if indicated, with ureterovesical or uretero-ureteral anastomosis. The sooner deligation is performed the more favorable the prognosis. Double nephrostomy, as a temporary expedient with the hope of restoring ureteral function after absorption of the ligatures, also may be performed.

Aside from damage observed at the time or immediately after the infliction of injury, exclusive of the bilateral type, the most common sequelæ of ureteral damage by far are urinary fistulæ, usually of the ureterovaginal type, and these Barney has found develop in twenty-four per cent of cases. Further, it is also necessary to consider another serious phase of the accident and that is the mortality. In Herman's twenty-three bilateral cases in which corrective surgery was done, there were seven deaths, a primary mortality of 30.4 per cent. In the series of cases incorporated in this paper, embodying fairly complete details, we record 57 bilateral accidents with 33 recoveries and 19 deaths, a mortality of 33.3 per cent. In five cases the final result was not given. In our series of 258 unilateral cases, there were 168 recoveries and 39 deaths, a mortality of 18.8 per cent. In 51 cases the final result was not mentioned.

Aside from the correction of ureteral damage inflicted at the time of operation, it is necessary, therefore, to consider the more remote yet most frequent result of the accident, namely, urinary fistulæ. These, owing to the damage not being recognized at the time of the primary operation, represent a large proportion of ureteral injuries.

The type of fistula is variable. It may be uretero-abdominal or ureterovaginal. The latter is the most frequent.

The abdominal type may be corrected, depending upon certain complicating factors, by a variety of operations, as ureterovesical anastomosis, uretero-ureteral anastomosis, by ligating the ureter, by nephrectomy, by nephrostomy, by anchoring the injured tube to the skin surface or by implanting it into the large intestine or other structures, as for example the appendix.

The aim of any correctional operation should be directed to the conservation of the corresponding kidney. This is accomplished by the first two operations mentioned. The last named methods, to which much surgical industry has been devoted, imply either sacrifice of the kidney or placing it, despite favorable reports to the contrary, in serious jeopardy. To the latter methods also, there are other objectionable features, though in spite of these there are certain conditions, other than the problem under discussion—I might say specific conditions—in which uretero-intestinal anastomosis, for instance, is indicated.

Since the large number of fistulæ are of the ureterovaginal type, we will confine our remarks largely to these. The trouble may be approached by two routes, either through the vagina or through the abdominal wall. Several operations have been designed to overcome the condition through the vagina, but vaginovesicoureteral anastomosis is technically difficult and extremely doubtful of success. Tying the renal end of the ureter through the vaginal vault is not easy and carries the same objectionable features as regards renal sacrifice as does ureteral ligation when performed from above. Colpocleisis, performed by converting the vault of the vagina into a part of the bladder cavity, has been performed five times in the series of ureteral injuries reported in this contribution. All the patients recovered. The writer has performed this operation once, and assisted in two others. The results were fairly satisfactory in all, though in one case calculi formed in the vaginal sac. Colpocleisis, however, inevitably is followed by a certain amount of contraction of the fistulous ureter and this of necessity must favor ureterorenal dilatation, if not ureterorenal infection. Colpocleisis is associated with another disadvantage, and that is the tendency of urinary salts to accumulate in the adventitious pouch, there to form calculi. This occurred in one of the cases in which I assisted, and many similar cases have been reported. My personal case has survived the operation for fifteen years without being conscious of any anatomical derangement in her urinary tract.

There is still something to be said regarding the vaginal methods of treating ureterovaginal fistulæ and that is the importance—provided there be no urgent symptoms—of treating the condition along simple expectant lines. This plan especially should be adopted, if the surgeon has any reason to regard the injury a minor one or one of incomplete ureteral division. Experience has shown, as a review of the cases herewith reported indicate—that many cases of partial injury heal spontaneously.

Finally, in the vaginal methods of treatment it would seem necessary to refer to cases of partial occlusion which follow operation. This accident probably must—owing to scar tissue formation—inevitably follow a certain number of extensive pelvic operations. Partial occlusion may result either from direct contraction of the tube from adhesions or distortion or kinking of the tube from a similar cause. Partial occlusion, if of a minor type, as demonstrated by Hunner, may be cared for by progressive dilatation of the ureteral canal. In some cases it may be necessary, as shown by Barney, in order to liberate the kinked ureter, to incise the periureteral adhesive bands.

ABDOMINAL METHODS

The methods of treating ureterovaginal fistulæ through the abdomen are manifold. The two which afford preëminently the most satisfactory results are uretero-ureteral and ureterovesical anastomosis. These two methods stand supreme, because they have for their fundamental object conservation of both ureteral and renal function and by these methods, too, these aims usually are attained.

LIGATION

This, as a correctional method, has received a great deal more consideration than it deserves. The procedure implies renal sacrifice by atrophy and as a primary operation for ureteral injury is not justified. In six of ten cases of ligation recorded recovery occurred without systemic disturbance or symptoms in the neighborhood of the injury. One patient developed hydronephrosis; while in the other five renal atrophy evidently took place. Two of the unsuccessful cases were due to the ligature cutting through or damaging the ureter to such an extent as to cause leakage of urine into the retroperitoneal tissue in one patient and into the peritoneal cavity in the other. Both patients died. In another unsuccessful case a urinary fistula formed, due probably to an absorbable suture. Upon this patient a nephrectomy finally was performed. In the fourth unsuccessful case death resulted from renal infection eight weeks after the primary operation. Ligation, then, should be adopted only in the rarest emergency and this phase of correcting a damaged ureter through the abdominal wall will be dismissed with this simple paragraph.

NEPHRECTOMY

(First performed by Gustav Simon, August 2, 1869)

This should not be adopted unless the corresponding kidney is the seat of trouble. It should never be performed unless frank infection is present and then only after the opposite kidney is proved competent to assume double duty. We believe with Morris, that nephrectomy as a primary operation for accidental damage to the ureter, at one time frequently performed, is an absolutely unjustifiable procedure.

NEPHROSTOMY

(First performed by Bryant in 1870)

As an emergency, life-saving recourse, and occasionally, owing to the presence of local or systemic symptoms which contraindicate intra-abdominal surgery, this operation may be done.

The three methods herewith briefly described have been given first place in the text of this paper. In actual practice they should stand subordinate to the conservative operation of anastomosis, either uretero-ureteral or ureterovesical, which has for its supreme purpose the conservation of tissue and function.

URETERAL ANASTOMOSIS

(First performed on the human subject by Franz Schopf in 1886)

Restoration of function by anastomosis, experience has disclosed, is usually quite successful.

Uretero-ureteral union is altogether satisfactory, as shown by Peterson in analysis of seventy-two cases. Ureteral anastomosis with various sections of the large bowel is called for only in very exceptional cases.

The abdominal route seems to provide certain special advantages and is the method of election either in uretero-ureteral or ureterovesical procedures. The methods of treating ureteral injury as recorded in this paper were:

Bilateral

1. Bilateral deligation	18	cases
2. Bilateral ureterovesical anastomosis	13	”
3. Bilateral nephrostomy	12	”
4. Nephrectomy	2	”
5. Colpocleisis	2	”
6. Bilateral implantation into rectum	2	”

Unilateral

1. Ureterovesical anastomosis	51	cases
2. Uretero-ureteral anastomosis	50	”
3. Nephrectomy	34	”
4. Deligation	13	”
5. Clamps removed	11	”
6. Ligation	8	”
7. Colpocleisis	3	”
8. Ureterorrhaphy	2	”
9. Winkel's operation	1	”
10. Decapsulation of right kidney	1	”

11. Ureter anchored to abdominal incision ..	1	"
12. Vesicovaginal fistula estab.	1	"

Of the various operations performed, the results as regards recovery and death are given in the following tables:

Bilateral Cases

	Cases	Recoveries	Deaths
Bilateral deligation	18	14	4
Bilateral ureteral anastomosis..	13	10	2
Bilateral nephrostomy	12	6	6
Nephrectomy	2	2	0
Colpocleisis	2	2	0
Bilateral implantation into rectum	2	1	1

Unilateral Cases

	Cases	Recoveries	Deaths	Not Stated
Ureterovesical anastomosis	51	39	6	6
Uretero - ureteral anastomosis	50	46	4	0
Nephrectomy	34	27	2	5
Deligation	13	11	1	1
Clamps removed	11	11	0	0
Ligation	8	6	1	1
Colpocleisis	3	3	0	0
Ureterorrhaphy	2	1	1	0
Winkel's operation	1	0	1	0
Decapsulation of right kidney	1	1	0	0
Ureter anchored to abdominal incision	1	0	1	0
Vesicovaginal fistula established	1	1	0	0

Peterson, in studying seventy-two cases of uretero-ureteral anastomosis found that all methods gave fairly satisfactory results with some advantage in favor of the end-in-end or the end-in-side procedure. This author claims that the operation is perfectly feasible, meaning by this that the ends of the ureters can be so adjusted and secured as to prevent leakage with maintenance of ureteral patency. In the series of cases recorded by this writer there were six deaths, four of which were attributed to the operation, a primary operative mortality of 5.5 per cent.

One death, that recorded by H. Morris, Peterson claims, was not a result of the operation, but of preëxisting disease of the kidneys, both of which at autopsy were found hydronephrotic.

In the case reported by Blau death resulted from defective technic in applying the sutures. This was followed by peritoneal infection about the site of anastomosis.

"Heart disease" was ascribed as a cause of death in the case reported by Sadowski, but autopsy disclosed a hydro-ureter and a hydronephrotic kidney.

Peterson believes—a point we have already emphasized—that anastomosis of some sort is the operation of choice, because its aim is to conserve and that it should always be preferred to ligation or nephrectomy. I am sure we all support this contention, confirming the argument set forth by Bovee in his classical paper on uretero-ureteral anastomosis presented twenty-five years ago at the meeting of the Southern Surgical Association in Nashville, Tennessee. Respecting the advantages offered by the various methods of anastomosis, Peterson claims that statistics favor the end-in-end or the end-in-side method. In twenty-nine cases of end-to-end anastomosis there were four deaths assigned to the operation.

As regards partial failure or leakage in the various methods, Peterson's report shows that in twenty-nine cases of the end-to-end operation, leakage occurred in nine. In twenty-five end-in-end operations leakage occurred in five; and in fifteen end-in-side operations leakage occurred in two only. These figures disclose that in a total of forty operations of the end-in-end type leakage occurred in seven, while in twenty-nine operations of the end-to-end method, leakage occurred in nine. Regarding the final results, both clinical and experimental, investigation reveals that in a certain number of cases, though small, a varying degree of obstruction or stricture may follow, but in the main this is negligible. Alksne, from experimental studies on animals with respect to results of the various methods of uretero-ureteral anastomosis, claims that every operation, irrespective of how perfectly, from a technical standpoint, it may be performed, will be followed by a slight degree, at least, of hydro-ureter or hydronephrosis.

More recent clinical experience seems to disprove this assertion, as disclosed, by cystoscopic examination, ureteral catheterization and functional kidney tests applied to patients in whom anastomoses have been performed. However, as Peterson states in his paper, "a patient in whom a reconstructive ureteral operation has been performed cannot be pronounced cured unless the results are all satisfactorily checked up by cystoscopic investigation, ureteral catheterization, functional kidney tests and x-ray studies." Without these investigations a "cured" patient, may be one with an atrophic or hydronephrotic kidney in whom the repaired ureter leads to the bladder with the patient appearing perfectly well, this because the other kidney and ureter have adequately assumed double duty.

No case of uretero-ureteral or ureterovesical anastomosis should be classed as cured or successful, then, until so proved by the most modern exploration of the repaired duct and its corresponding kidney.

CONCLUSIONS

1. From the large number of cases of ureteral damage recorded in this paper, it is quite apparent that the accident is a surgical complication of some magnitude and cannot be regarded as rare.

2. From the large number of cases of ureteral injury herewith presented it is obvious, also, that the accident must be much more frequent than generally is assumed.

3. Probably a certain number of ligations occur which are not recognized and which do not provoke immediate symptoms, though kidney destruction inevitably results.

4. Only a meager percentage of ureteral injuries which occur are reported. This should make a compelling appeal for faithfully recording this accident and all other surgical accidents as well.

5. Ureteral injury may occur in any section of the tube, from its renal origin to its bladder terminus. The most common site is in the cervicovesical section.

6. The accident may be sustained during the performance of a wide range of surgical procedures. It is most likely to occur during hysterectomy, both vaginal and abdominal, but especially in the latter, and in the proportion of five to one, as observed in the cases recorded in this series.

7. Deep pelvic operations other than hysterectomy exact a definite toll of ureteral damage, notably those for intraligamentary tumors.

8. Partial ureteral occlusion from postoperative peri-ureteral adhesions occurs occasionally.

9. In most instances ureteral occlusion or injury is unilateral. In a certain number of cases both sides are involved, the proportion being approximately six to one.

10. In unilateral occlusion or damage the accident occurs with almost equal frequency upon the two sides. In 355 cases the right side was affected 130 times and the left side 128 times. In 97 cases the side affected was not mentioned.

11. Ureteral injury as a surgical complication is responsible for a certain number of deaths, showing a mortality in bilateral cases of 33.3 per cent, and in unilateral cases a mortality of 18.8 per cent.

12. Irrespective of the mortality entailed, ureteral injury is associated with serious local results both immediate and remote. Immediate in the formation of urinary fistulæ (24 per cent) remote in favoring renal degeneration.

13. In the therapy of ureteral injury the fundamental question of prophylaxis is to be borne in mind. Here, as elsewhere, prevention is far better than cure.

14. Prophylaxis is served best by designing a procedure in which ureteral identification is made an essential part of the technic.

15. In vaginal hysterectomy ureteral damage is not likely to occur if performed by inverting the fundus and ligating from fundus to cervix and not, as formerly, from cervix to fundus.

16. Should ureteral occlusion occur, deligation or declamping, owing to impending danger of the corresponding kidney, should be performed immediately, if possible.

17. Should ligation or occlusion inflict obvious injury to the ureteral wall, the damaged section should be excised and a uretero-ureteral or ureterovesical anastomosis performed.

18. Bilateral occlusion, owing to the imminent danger of uremia, calls for immediate deligation and, if the exigencies of the case demand, a uretero-ureteral anastomosis or ureterovesical anastomosis may be performed.

19. Primary deliberate ligation as a curative measure is unscientific, and, owing to inevitable renal destruction, except in unusual emergencies, is unjustifiable.

20. Nephrectomy may be indicated occasionally, but as a primary corrective measure for ureteral damage is mentioned only to be condemned.

21. Nephrostomy may be done as an emergency life-saving procedure, if intra-abdominal work be contraindicated by local conditions or the systemic condition of the patient.

22. Vaginal correction of ureteral damage is technically difficult and of doubtful success.

23. In ureterovaginal fistulæ, provided partial or incomplete damage is suspected, an initial expectant plan may be adopted with fair hope of spontaneous recovery.

24. Finally, any operation designed to correct a damaged ureter should have for its fundamental aim the preservation of both ureteral and renal function.

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DISCUSSION

Dr. B. A. Thomas (Philadelphia, Pa.): I feel as though the essayists this morning should be congratulated. We were particularly fortunate in listening to such an excellent series of papers and I feel that there is far more food for thought than there is occasion for critical discussion. I was very much impressed by Dr. Bland's paper and I agree with him in every way, so far as my experience in male surgery goes. I am very glad to say, as yet I have not had that misfortune in male pelvic surgery—surgery on male genito-urinary organs—and feel that inasmuch as it is mainly a gynecological complication, I should rather leave the subject to my gynecological friends to discuss. I have always been guided in surgery by the principles laid down by the Mayo Clinic and seldom, therefore, am at variance with their dicta. I do feel it is a very difficult matter to differentiate by x-ray between a calculus in a horseshoe kidney and one in which the stone may lie in the lower calyx of a ptosed kidney.

With reference to heminephrectomy, I have had no experience in that condition. There is one thought that occurred to me in the presentation of the paper by Dr. Judd: so far as internal hydronephrosis is concerned, it seems difficult to understand exactly why an inflammation of the kidney pelvis or calyx should result in dilatation *per se*. As Dr. Judd said, there is probably associated some obstruction in the urinary tract. Certainly in the female, we may surmise this to be the result of single or repeated pregnancies, or perhaps as the result of fibromyomata there has occurred pressure on the ureters with slight resultant hydro-ureter and dilatation of the calices, which has never attracted attention. As the result of these repeated transient dilatations stasis may occur, infection may be more easily ingrafted, and may set up a definite inflammatory process of the pelvis and ureter with slight obstruction, which may lead to greater dilatation; and as the infection subsides or disappears a recognized form of hydronephrosis results.

Dr. Judd stated that in tuberculosis of the kidney, they were coming to the belief that there was always an associated tuberculosis of the lung. I always thought that there must be tuberculosis in the lungs, peribronchial lymph nodes, or elsewhere in the individual. Tuberculosis in the kidney is always secondary to systemic tuberculosis. The treatment of the pedicle is certainly a very important consideration. Those who have done nephrectomies for tuberculosis have encountered the suppurating wounds that break down as the result of infection of the perirenal tissues by pus escaping from the infected ureter; and the practice has been adopted, ever since recommended several years ago by the Mayo Clinic, of drawing the stump of the ureter through a rubber tube. I have utilized the procedure and believe it is a most excellent and satisfactory way of treating these ureteral stumps. As Dr. Judd said, it is impracticable and impossible to attempt to eliminate all tuberculous infection by simply removing the ureter (even though the entire ureter is excised) without removing a section of the bladder involved. We have seen extensive involvement of the bladder by tumor as the result of primary growth in the kidney. About twenty years ago, Zuckerkandl reported a case autopsied, that had died as a result of urinary obstruction from papillomata which had filled the ureter and bladder as descending implantations from a mother growth in the kidney.

The double clamp is very important. Unfortunately, we find a number of cases where it is practically impossible to use two clamps, particularly in tuberculosis where there is a great deal of inflammation of a very short and thick pedicle. Certainly the dangers encountered when you resort to a single clamp are greatly increased, even though you use the figure-eight transfixion ligature supplemented by a second ligature around the entire pedicle.

I was very much interested and shall certainly try out the transverse incision of the pelvis of the kidney in some of these difficult cases where stones are to be removed from the kidney. Thus far I have used only the longitudinal incision and am glad to say that so far as I know there has not occurred a single case of stricture. Anatomically it is the logical incision to make. I have never found it necessary, although, on theoretical grounds it is certainly the type of case in which to resort to fluoroscopy in the removal of stones from the kidney.

Dr. Adams spoke about the ureteral catheterization and the collection of urine for the diagnosis of tuberculosis of the kidney. That is a chestnut as far as I am concerned and I do not and never have found it necessary to catheterize the ureters for the proper management of a case of tuberculosis of the kidney. I have always found it entirely satisfactory to depend upon the revelations of indigocarmin under these circumstances. I do not agree with him that the sole field of indigocarmin lies in the determination of ureteral orifices. *Par excellence* its sphere is in proper diagnosis and management of tuberculosis of the kidney. Certainly we all know it is not always possible, even in the collection of 24-hour specimens of urine, to find tubercle bacilli when they exist. Certainly we cannot depend upon collections of urine for twenty minutes or half an hour for this purpose, as is the practice in ureteral catheterized specimens. There is a potential danger of infection of the good kidney. If I remember correctly, Chute called attention to the fact that the incidence of infection of the normal kidney was 10 per cent higher than when the normal kidney was not catheterized. On one side of the scales, therefore, we have potential danger, while on the other we have a possible erroneous finding. On the one hand we may not find tubercle bacilli when present; on the other we may actually carry one or more up into the normal ureter, irrespective of the dexterity of the cystoscopist. Then when we re-collect them in the catheterized urine, the deduction is drawn that tuberculosis of the normal side exists.

Responding to Dr. Haines, I may say I have not found the small percentage of cases in which it is necessary to operate in calculus of the ureter that he has found. Our statistics show that about 50 per cent of patients with ureteral calculus have had to undergo operation. I believe it is true that approximately 75 per cent of patients with ureteral calculi will pass them, assisted or not by dilatation of the ureter, but the cases I see are those where expectant treatment has failed. I seldom see those cases that pass their calculi unaided. I feel as though there is a tendency on the part of urologists who do little operating to overvalue ureteral instrumentation in assisting stones to pass, and I feel there is often less harm, pain and torture to patients by resorting to surgery. If we are guided in each case by actual conditions present, such as size, shape, evidence of suppression of urine, etc., in determining the choice between ureteral dilatation and ureterolithotomy we will probably save our patients much unnecessary suffering. The danger from operation is almost nil.

Dr. Judd stated that they have had only one fatality in 500 cases. My own series has been not more than 40 or 50, but there has not been a single death in an uncomplicated ureteral calculus.

DR. CHARLES H. AUFHAMMER (Pittsburgh, Pa.): This most interesting symposium has more or less completed my feeling to-day that we have spent our time to great advantage. Unknown to Dr. Judd I have followed him almost implicitly from my first visit to his clinic a number of years ago. An important thing as brought out by Judd in surgical procedures is the initial incision. Too often we approach a kidney with the idea that we are definitely going to do something, and carelessly make an incision which does not give us the exposure necessary. The exposure by the Mayo incision has certainly been of great assistance. A most important point was brought out by Dr. Judd when he used the particular word "determine."

Determine, before operation, what type of kidney case you are dealing with by every diagnostic procedure. Too often one is called in to see kidney cases upon which the surgeon is about to operate and in which none of the preliminary determining procedures have been done, cystoscopy especially. I think that particular point—determining the future procedures in kidney disease—is most essential.

In renal tuberculosis it is well to bear in mind that the ureter is involved very markedly. Not only the ureter itself, but the meatus on that side and the bladder mucous membrane surrounding it give a picture almost identical with that of the pelvic ureter. By cystoscopy you are able to tell whether or not a tuberculous condition exists by the appearance of the perimeatal mucous membrane.

Dr. Judd brought out in his slides of anomalous renal vessels that of the artery going across the urethropelvic junction. Two days ago we had occasion to meet this condition. He advocated nephrectomy and I was pleased to note we had followed his advice in that regard. The important thing is to "determine" the diagnosis and "determine" the future procedures by using every diagnostic method available before operation.

Dr. Adams spoke of the necessity of x-ray in cystoscopic examination and it is very important. Occasionally you find hospitals where conditions are such that you cannot have a combined cystoscopic and x-ray room. In that event we pass the catheter into the kidney pelvis and hold it in place with adhesive, wheeling the patient to the x-ray room. It is well worth the trouble and inconvenience. Dr. Adams also spoke of indigocarmin. I have not used indigocarmin for fifteen years, but I think Dr. Thomas has had such a vast experience that his advice is worth a great deal. In using the differential phthalein test you are led to believe one kidney *is* functioning and one is *not*, because the phthalein appears from one side and not from the other. The reason of this inequality is often due to a little plug of mucus in the small eye of the catheter, or perhaps a spasm of the ureter itself. Bear in mind that the ureter is likely to have spasms, as it is a hollow muscular tube.

One point that Dr. Haines brought out rather well, and I believe it has been the usual experience, at least it has been mine, was in relation to small stones in the ureter: many pass without the intra-ureteral manipulations. However, I think it is a procedure well worth trying. In a number of cases I have found this to be an asset. We have no compunction in placing an indwelling catheter. This has been done in some cases of calculi, but most of them have been for pyelitis of pregnancy.

A fact that might well be brought out is that we were always taught that pyelitis of pregnancy was due to pressure of the uterus itself on the ureter at about the pelvic brim. We have had the opportunity of injecting the ureter postmortem in a pyelitis case at term with a solidifying medium and found that partial obstruction was due to thickening in the base of the broad ligament caused by changes in the uterus itself, producing posterior ureteral kinking toward the median line one to 3 inches from the bladder. In these cases we leave the indwelling catheter for a number of days or weeks—as many as six weeks and without irrigations.

I should like to ask Dr. Bland whether, in applying a clamp to the uterine vessels, if the lowest clamp is routinely placed at right angles to the axis of the uterus it is not safer than grasping the ureter itself. In uterine carcinoma, those of us who have used radium have experienced relatively no, if ever any, injury to the ureter.

DR. JOHN J. BUCHANAN (Pittsburgh, Pa.): I cannot let this opportunity pass without expressing in public what I have so many times expressed in private, my deep gratitude to these three men. William J. Mayo. Charles H. Mayo and Edward S. Judd, who have done so much to improve the character of my surgery in the last 18 years. They have done more than this; they have extended a wonderful hospitality; they have been kind friends and they have shown me everything in their clinic as it was. I, therefore, beg to extend my thanks to these gentlemen through Dr. Judd, and I see many in this room who have reason to feel the same way toward these great men.

When Dr. Judd had finished his paper it looked as if it was complete and that there was nothing else to say. There was nothing that he said that anyone could contradict because it was all true; but there are a few things which even the ordinary surgeon can say which is supplemental. He speaks a little over our heads, from enormous experience; he speaks from a skill which we do not have and, therefore, he omits certain points in which he is so skillful that he does not think it necessary to mention them.

The first point I want to call attention to is the difference in the facility of enucleation and delivery of the kidney in different cases. You will see some kidneys which are so easy to deliver from the body that it is only necessary to separate the fatty capsule, lift it up and pull the kidney out of the incision. I want to call attention to one thing Dr. Thomas has said, and that is that the incision should be large enough. The pictures Dr. Judd showed in which the forceps were beautifully applied, illustrate the work as it goes on in his clinic day after day. In some cases, however, the loin is a mass of cicatricial tissue from old suppuration. Dr. Judd has incidentally called attention to the skill required in finding the plane of cleavage in these cases. That requires skill that must be available at the time of operation. I feel sure that almost everyone has seen cases in which, even after this plane of cleavage has been found and the kidney evacuated, the pedicle is still large and the vessels not to be identified as in a normal pedicle. If we have a normal pedicle for a nephrectomy, my practice is to display the vessels of the pedicle and the ureter and then to control these vessels individually with double ligature. I prefer to do this rather than to seize the pedicle with forceps and ligate it *en masse*. Dr. Judd can do that because he is skillful; but I am not, and I prefer to tie the vessels individually. This double ligature was practiced by Henry Morris from 1880 to 1900 and referred to in his book as an essential to safety. If we ligate a heavy kidney pedicle in one mass, what do we do? Our ligature may be too loose or too tight. If it is too loose and we cut the kidney off above the pedicle we have a spurt of blood and then we have to go after that vessel and then perhaps another vessel. Then we have to tie that pedicle again. Suppose we have made the ligature too tight. We may cut off the vessels with our ligature. Therefore, I feel the ligature *en masse* is not as good for the ordinary surgeon as individual ligating. This difficulty of securing of these heavy inflammatory pedicles has occurred since nephrectomy was first performed, and men have devised various methods of taking care of them. Some perforate the pedicle and put on an interlocking ligature. I am afraid to do that because in one instance I perforated a large vessel and that was worse than the ordinary slipping pedicle.

Arpad Gerster, of New York, recently deceased, had a method of taking care of these pedicles with elastic ligature. Then he disposed of the stump by using an extra ligature, or by individual ligation of vessels. Within the last couple of years, I have employed a method which is so efficient that any ordinary surgeon will feel like using it. I lay a loop of common tape about one of these thick pedicles, seize it with ordinary clamp forceps and twist it till circulation in the pedicle is controlled. Then I feel sure that I can cut the kidney off beyond the tape with perfect safety. The tape does not injure the vessels in the slightest degree. I secure the vessels in the stump with buried ligatures and then relax the constriction by untwisting the tape a little. Maybe I see a vein or an artery bleeding. I catch that and before very long I have all the constriction off.

Suppose the patient is in very bad condition and I cannot wait for ligature of vessels; I simply leave the tape on. That is my permanent ligature on that stump and one forceps clamped on the tape close to the stump prevents untwisting. This gives control of all the vessels and they cannot get away. When the time has come for removal of the tape, it is only necessary to untwist it and its withdrawal is easy.

Morris, in 1900, gave out the dictum that no kidney should be removed unless as a last resort; that a man who had one kidney was in much more danger of his life than a man who had even an imperfect kidney on the other side.

I have had occasion to look up our records 20 years back for nephrectomy and, while the numbers are not great, we have had enough cases to convince me that, with a healthy kidney remaining, the patients continue to enjoy good health. Therefore, I think we must be a little bolder in removing kidneys. We should not, however, remove a kidney because it has two or three stones in it. I had the pleasure of being present in Dr. Judd's clinic when he was trying out the portable x-ray apparatus to determine, during operation, whether there were any remaining stones in a case of multiple nephrolithiasis. The apparatus worked beautifully and he was able to demonstrate that he had all the stones.

Dr. Leon Herman (Philadelphia, Pa.): I enter this discussion because we have had the misfortune to have had a case of bilateral occlusion of the ureter. I was surprised to hear Dr. Bland say that he has been able to find 58 cases of this kind in the literature, but he probably includes all cases of bilateral injury. Bilateral occlusion due to ligature would seem to be an extremely rare condition. Our patient was operated upon for advanced pelvic inflammatory disease, during the course of which operation both ureters were ligated. Following this operation there was complete anuria for 48 hours but otherwise the convalescence was apparently normal. On cystoscopic examination we found both ureters obstructed. The patient was then anesthetized, placed in the Trendelenburg position and the ureters exposed transperitoneally. Minute openings were made in the ureters above the points of ligation and the ureters lifted from the bed of exudate in which they were lying and the encircling ligatures removed. The cystoscope was reintroduced and while the assistants were closing the abdomen, indwelling catheters were placed in the ureters and left in for five days. The patient made an uneventful recovery.

I regret with Dr. Buchanan that Dr. Judd compliments us by talking over our heads. I should like to have had him describe his method of treating vesical tuberculosis after removal of the diseased kidney. We have found that Israel's mixture is beyond all doubt the best remedy for this condition that has yet come to our notice. I should like to ask Dr. Judd whether x-ray therapy has been of any service in his hands in this condition.

Dr. Stephen E. Tracy (Philadelphia, Pa.): I should like to ask Dr. Judd, what he would recommend for a functioning pelvic kidney which produces symptoms, with a normal kidney on the other side? I have a patient with a pelvic kidney who every few months gets dull pain and discomfort in the organ and I have carefully refrained from any interference.

In operating upon patients with a tuberculosis of the kidney, I am sure that the ones from whom I remove the ureter with the kidney, have a shorter and easier convalescence than those in whom the ureter is left.

In regard to calculi in the ureter, I am satisfied a large percentage of the stones will pass if given an opportunity or if aided by manipulation. In case of a blocked ureter, if the function on the opposite side is normal, there is no occasion for anxiety. We had one patient with a complete block of the ureter for nine days. We arranged to operate the morning of the tenth day. During the night of the ninth day she had an attack of renal colic. Cystoscopic examination the next day showed the calculus in the bladder and a catheter was readily passed to the kidney. Functional test of the kidneys a few days later showed it had fully recovered. In another case there was a complete block of the ureter for four days. This kidney also fully recovered its function.

Dr. Haines called attention to the importance of a differential diagnosis between a calculus in the right ureter and a chronic appendix. If his recommendations for a thorough investigation were carried out, many unnecessary operations on the appendix would be avoided.

Dr. Bland has given us an excellent paper on ligation of and injury to the ureters. There is no question that ureters are injured or ligated much more frequently than is generally believed. In deep pelvic surgery in the presence of bleeding, if there is any question about the location of the ureter, the bleeding should be controlled by gauze pressure and the ureter dissected out. The bleeding points can then be controlled, usually without difficulty and without injury to the ureter.

Some years ago when doing a radical operation for carcinoma of the cervix, we dissected out what we thought were the ureters and followed them down to the neck of the bladder and laid them carefully aside. The operation was then completed in the usual way. In twenty hours no urine was obtained by the catheter except 8 c.c. which was there at the time of the operation. On making a cystoscopic examination we found that one ureter was blocked 2 c.m. above the bladder and the other 2.5 c.m. The patient was immediately opened up and the ligatures removed from the ureters. The structures which had been previously taken for ureters, were followed back and terminated in the anterior branch of the internal iliac arteries. The patient fortunately made a good recovery. Since that time in order to avoid a repetition of this error, we follow the ureter up beyond the bifurcation of the iliac vessels. If the ureter is crushed with forceps during an operation, appropriate treatment should be carried out immediately.

Dr. Herbert B. Gibby (Wilkes-Barre, Pa.): I want to endorse heartily all Dr. Buchanan said in regard to the Mayo Clinic and I think Dr. Judd has placed us under still greater obligations.

There is just one little procedure I want to describe in regard to the location of a stone in the ureter when necessary to operate for its removal. We all of us know how elusive a stone in this situation frequently is, and how vexing it is to fail to find it. In particularly fat patients, also, it is sometimes exceedingly difficult to locate after the ureter has been isolated. In conditions of this sort I have overcome the difficulty by making an opening into the peritoneal cavity and searching for the stone from the kidney down, either by pressing the ureter against the bony pelvis or, with one hand in the peritoneal cavity and the other outside, the ureter is palpated between the fingers for its entire length. When the stone is located, the ureter is raised on a double bladed retractor with the stone between the two blades of the retractor and can be readily removed in the usual manner. I have always carefully closed the opening into the peritoneal cavity previous to opening the ureter, and have never had any infection resulting from this procedure.

Dr. George M. Dorrance (Philadelphia, Pa.): In regard to surgical tuberculosis, after you take the kidney out, you have just begun to treat your patient. After you see Rollier's patients cured of tuberculosis you realize this. Tuberculosis is a constitutional story. These patients should have Rollier's sun treatment, which is forced feeding, absolute rest in bed, and gradual exposure to the sun. He is very careful about undue surgical interference. Personally I take out the ureter all the way down. The patients who receive after treatment of sun, etc., are entirely different people. Those of you who have not read Rollier's book on the sun treatment in tuberculosis would find it worth while.

Dr. Alexander Randall (Philadelphia, Pa.): I should like to draw one lesson in regard to Dr. Haines' paper, that is to warn you of the danger of a kidney blocked by calculus going into a silent period, possibly best exemplified by a specific case.

I was called to see a patient on a Tuesday. He had started with colic on the previous Friday, with typical pain, and radiation, associated with vomiting. The diagnosis was almost made for us, because just six months before our friend, Dr. Keyes, of New York, had operated on the same kidney, removing two calculi. I advised on this, the fourth day, that the patient be taken to the hospital, which was done. On arriving at the hospital (like going to the dentist's office with a toothache) his pain ceased. I waited 48 hours, expecting it to start up again. At the end of that time he was perfectly comfortable and had the attitude of "You say go and I will jump out of bed." The following day an x-ray examination showed a calculus in the lower portion of pelvis.

Prior to getting the x-ray report I was persuaded by my resident to cystoscope him, he pointing out that for 72 hours the patient had had a slight persistent elevation of temperature and each day a leucocytosis around 10,000 or 12,000. Otherwise, however, the patient appeared clinically well, and apparently considered himself well. Cystoscopy was done; the catheter passed with ease for 28 c.m. up the right ureter. We waited several minutes and, getting no secretion, passed it 1 cm. further and immediately obtained 60 c.c. of rather heavy purulent urine. In the next 24 hours the temperature and leucocyte count was normal and the patient went back a few days later to Dr. Keyes for his second operation. Keyes wrote that he opened the kidney pelvis and removed a small calculus.

This is the point I want to make: Do not be fooled in thinking because you have a cessation in clinical symptoms, especially pain, that the kidney is all right. It can be completely blocked, and after a certain period of time it will gradually lose its function and pain will disappear. Such a kidney is probably doomed to destruction unless relieved by drainage promptly.

Dr. Haines (in closing): There seems to be some difference of opinion regarding the management of these cases of ureteral calculus. I specifically stated that the cases reported were of the small calculus type, and that in the presence of infection and obstruction where a catheter could not be passed, they should be treated surgically. Had the referring physician examined the urine, many of the cases referred with an erroneous diagnosis would have been correctly diagnosed. Expecially is this true of those cases referred with a diagnosis of appendicitis. I might add that after reviewing our own results and the results of others, we at present consider chronic appendicitis last in the diagnosis of all cases of indefinite abdominal pain.

Dr. Judd (in closing): I enjoyed this symposium and the papers of Drs. Haines, Adams and Bland very much and I am sure that I got some very interesting and important points from them. I shall not attempt to discuss all of the points that were brought up. I merely want to say that in our clinic we agree with Dr. Haines that ureteral stones can be considered in three groups: one in which the stone will pass of its own accord, another in which manipulation will enable the stone to pass without further help (and as experience in manipulating stones has increased, the number removed in this way is correspondingly higher, so that in the past two years the percentage has increased from 20-25 per cent to from 50-80 per cent) and a third group including those in which operation is necessary on account of considerable infection or some complication, and embracing about 20% of all cases.

I was particularly interested in Dr. Adams' paper on renal function. Dr. Hench who did some investigative work under Dr. Rowntree has shown that the urea content in the saliva is practically identical with that in the blood and that the determination of the urea in the saliva will give as accurate a knowledge of renal function as the urea of the blood. This is called by Dr. Hench, "The Salivary Urea Index." I know that the members of the American Urological Society were very much interested in this last spring.

Regarding stone in horseshoe kidney: An x-ray plate sometimes gives the first suggestion that a deformity exists. A stone placed as that one was would make a urologist suspicious.

Mention has been made of internal hydronephrosis and the etiology of the condition. For some time I had a notion that hydronephrosis was caused by obstruction, we saw so many cases in which we were able to demonstrate an obstruction. I feel now that there may be either a spasmodic condition or a kinking of the ureter at times, but of course this is purely theory.

The ureter may be a factor of considerable importance in any resection of the left colon or operation for pelvic malignancy. It may be involved in the malignant process or it may be accidentally injured or ligated. We have had cases in which by the time the colon operation was completed we had done all the patient could stand. In these instances it was necessary to ligate the ureter and leave it *in situ*. In some patients the kidney had to be removed later. I believe that a great many more ureters are ligated in pelvic work than we suspect. But I doubt whether hydronephrosis in human beings is due to occlusion. Dogs develop it when the ureter is ligated. Dr. Bland is right in saying that if a ureter is injured it must be repaired.

Fluoroscopy was stimulated by the war in the hunt for foreign bodies, and since then has become a very important asset, especially in kidney surgery. Dr. Hugh Cabot of Boston reported that from 48 to 50 per cent of the calculi are overlooked or re-formed. After analyzing that series, we started an investigation of our own. Previously we removed only the stones shown by shadows on the x-ray plate, but the number of little stones shown by x-rays made shortly afterward was appalling. We began to use the fluoroscope at the operating table before the kidney was replaced and felt sure that we found a number of stones that way that would otherwise have been overlooked. This is now practically a routine procedure in our clinic.

Regarding the pelvic kidney in which there was some pain: The operations which I have done for pelvic kidneys have been difficult. Blood vessels in unusual angles may be encountered. Unless I were sure that the pain came from the kidney, I should hesitate to operate, especially if the function is apparently normal.

I was very much interested in Dr. Buchanan's tourniquet for the control of the circulation. It cares for a technicality in some of the most difficult kidney surgery that we have to do.

Dr. Bland (in closing): I have very little to add to the final discussion of this very important subject. Most enlightening points have been brought forth by the various speakers. I should like to say that in the replies received to my questionnaire the conviction seemed to prevail that ureteral damage was most likely to be inflicted by the "occasional surgeon" and by those unskilled in the art of deep pelvic surgery, especially as practiced "in small hospitals." In good hands the accident, it was thought, should be exceedingly rare. The series of injuries reported in this paper have, for the most part, been collected from reports submitted by men representative of American surgery, nearly all of whom have had the accident occur on one or more occasions, ranging from one to eight times, with an average of approximately three each. If this array of ureteral damage occurs in good hands, then I can only urge that we most fervently pray for those unfortunate individuals who inadvertently fall into hands we look upon as "poor."

REMARKS UPON THE REMOVAL OF THE CATARACTOUS LENS BY A VACUUM METHOD

With Presentation of an Instrument for Preventing Vitreous Loss*

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NORRISTOWN, PA.

There seems to be a tendency of late to break away from accepted customs and technique in the various branches of medical and surgical practice with the hope of advancement in the way of new treatments, operative procedures, etc., broached with the idea that there must be something radically wrong with the methods in common practice, and in some instances, with total or partial disregard of the safety factor as applies to the patient. Proven methods are discarded for the more spectacular until a time comes when the novelty of the thing ceases to exist as a compelling agent in stimulating our desires for something new, and we drift back into our tried and proven ways to reflect whilst awaiting the next outburst of enthusiasm.

The removal of the cataractous lens in capsule seems to me to be one of these periodic outbursts, most interesting to accomplish, fascinating to watch, when all goes well, and decidedly not so fascinating when vitreous stares one in the face as a mute reminder of the dangers confronting us in our pursuit of the spectacular. In this latter eventuality we reflect and ask ourselves the question "Why should we adopt such an operation?" My answer is "We should not."

At the time Colonel Smith demonstrated his operation at the Wills Hospital in Philadelphia, where he operated upon eighteen patients, it was my pleasure to assist in the cases furnished for the day from my clinic. Every opportunity was had for a "close up" inspection as the operations proceeded. The method of Colonel Smith did not impress me. It gave me the impression of too much crudity in spite of the fact that the operations were cleverly done.

Now when one sees eighteen cases of cataract operated upon intracapsularly and vitreous lost in one-third of these operations, the latter having been done by one who is a past master in this particular operation, one must necessarily form an unfavorable opinion as to the advisability of adopting such a procedure as a routine for the relief of our cataract patients as we know them in our own localities. We expect to meet our patients at any future date and the spectacle of broad operative colobomata, updrawn irides or possibly empty sockets, is not one to cause us to retire with a clear conscience.

Regardless as to how lightly loss of vitreous is held by the operators who employ this method, it must be admitted by anyone who has followed up hospital work that it is a serious consequence to be reckoned with as regards the future welfare of the operated eye. When vitreous is lost the eye suffers ; if not at the immediate period following operation, then at a later period when degenerative changes may show themselves as a reminder of what has gone before.

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* Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 2, 1923.

Many eyes have lost vitreous and apparently seem none the worse, but there are eyes showing the bad effects of this mishap; and knowing this, why should we encourage vitreous loss any oftener than is necessary?

Seeing the Smith operation convinced me that it was no operation to adopt as a routine and I have had no desire even to attempt it, knowing from actual observation just what it is and what results are obtained. However, when Barraquer demonstrated his vacuum method of removing the cataractous lens intracapsularly, at the Wills Hospital last year, the whole procedure was seemingly so much more in keeping with the safety factor and the technique so brilliant, that one marveled at the excellence of his work. Three cases were operated upon, one from my own clinic. Two of these cases were done without difficulty, but in the third the capsule ruptured, making it necessary to resort to the lens curette. In spite of this mishap Barraquer cleaned out the cortical matter nicely after drawing the lips of the wound together with the stitch which he employs before removing the lens. The introduction of this stitch in all his cases proves conclusively that trouble must be expected and he prepares himself for this eventuality by inserting but not drawing up, the suture through the center of the lips of the wound, tying after the lens is delivered through the loop of the stitch.

There is no gainsaying the fact that the Barraquer operation, when all goes well, is a beautiful thing to witness; but it is fraught with dangers, making it an operation not on a par, from a safety standpoint, with the regular combined extraction.

I have done only fourteen of these vacuum extractions by a modification of Barraquer's procedure and I cannot conceive how it or any other intracapsular operation will ever be adopted by the majority of operators as an accepted mode of extraction.

Considering intracapsular methods as compared with the combined extraction, I do not think there is one ophthalmologist in this room who, after seeing these operations, would consent to have a member of his own family operated upon intracapsularly. The risks are too great. "Then, just what is gained?" you may ask. Nothing but the elimination of the needling, and who would object to this latter procedure? Personally, I would much rather needle a capsule from the standpoint of simplicity and ease, than any operation with which I am familiar. What slight risk there may be from infection is far outweighed by dangers of vitreous loss with possibly loss of the globe in the intracapsular operation.

One of my interns, Dr. Smith, has been good enough to look over my house records at the Wills Hospital, covering a period of two years. These records show that in sixty-five consecutive extractions by the usual combined method, I have had but two showing an escape of vitreous. In both of these the loop had to be resorted to. In two cases done by Dr. Means by the Wright method (intracapsular), vitreous was lost in one. In the fourteen cases (intracapsular) done by a modified Barraquer method using buccal "suction," three cases lost vitreous, one showing an escape of about half a dram; another lost an amount as described by the intern, of a volume equal to one and a half times the size of the lens, whilst the third lost an equal amount of straw-colored fluid vitreous. It must be remembered that these fourteen cases were the first operated upon by myself using the modified vacuum method. If you will recall, Barraquer did not report his first hundred cases and rightfully so, as the technique was then simply in the making. A certain amount of practice and familiarity must be attained before the best results can be obtained.

Now as to the operation itself: As you know, Barraquer employs quite a formidable, complicated although ingenious, apparatus for creating the vacuum. This apparatus in itself seems to be a nightmare to any who essay the procedure. However, the apparatus is very cleverly constructed and works well.

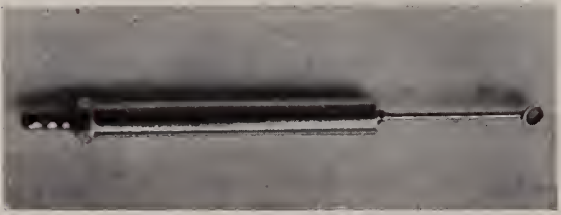
The thought occurred to me while watching Barraquer operate, that a lens capsule would withstand only so much of a pull before giving way and the apparatus appeared to be so powerful for such a small task that I figured more than enough vacuum could be secured by buccal "suction," if you will pardon the term. (Scientists tell us there is no such thing as "suction.") If the aforesaid be true the cumbersome piece of apparatus could be discarded.

Accordingly a vacuum hand piece was secured, comprised of a tube with a shallow cup on one end. To the opposite extremity a small rubber catheter was attached, holding a section of glass tube as a mouthpiece. With this crude apparatus my first intracapsular was attacked. The usual incision was made, possibly somewhat larger than ordinary, and the iridectomy done. The cup was introduced into the anterior chamber and carefully slid beneath the iris so that close application was secured to the lens capsule. By creating a vacuum using buccal "suction," the lens was withdrawn without difficulty. I did three of these operations before Barraquer arrived in Philadelphia and lost a small amount of vitreous in two.

Later, upon seeing Barraquer operate, I noticed that he tumbled the lens, although his article published in the *American Journal of Ophthalmology* did not so state. After adopting this tumbling I found vitreous was not so easily drawn out. The tumbling admits air back of the lens as it emerges and relieves the drag on the vitreous.

Using an open tube in this manner, should the lens become dislocated and a second attachment sought, one could readily see how easy it would be to evacuate the entire contents of the eyeball in a brief space of time. One slip and up would come vitreous through the tube without any means of stopping it, save a discontinuance of the vacuum, but by this time too much damage would have already been done before one could check the force withdrawing the vitreous, especially should the latter be fluid. This glaring danger led me to construct the instrument you see here today.

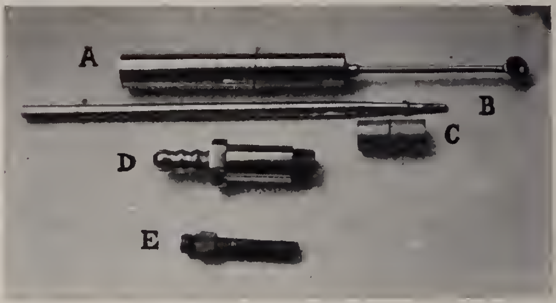
The apparatus which I here present may be compared to a medium-sized hypodermic syringe, the needle being replaced by a larger tube, at the far end of which is attached a vacuum cup of approximately five millimeters in diameter and two millimeters in depth. The cup has a slight flare, permitting easy introduction through the corneal incision and also allowing an easy insertion of the cup between iris and lens. If this cup is not flared at the margin, difficulty will be experienced in introducing the instrument into the anterior chamber and sliding it beneath the iris. One can readily see just what would happen should a vacuum be created whilst the instrument was over, instead of beneath, the iris and not properly engaged on the surface of the lens capsule.



The Duo-Vacuum Instrument

Within the barrel of this syringe is a plunger which fits snugly yet slides freely. This plunger is about fifteen millimeters in length and has free motion from one end of the barrel to the other. Upon creating a vacuum by means of buccal "suction" or by employing a pump, this plunger draws away from the cup end of the barrel creating a second vacuum which acts upon the lens capsule. The two vacua are in no way communicating, being separated by the interposed plunger. This prevents any fluid from passing through the instrument from the eye or vice versa, regardless of the strength of vacuum created.

As it is unnecessary to utilize the full capacity of the barrel, a threaded tube is incorporated within the instrument which acts as a stop and allows of any adjustment to stay the movement of the plunger. I have found that if the plunger is adjusted to move about five to eight millimeters, the vacuum created is sufficient to withdraw a lens.



Duo-Vacuum Instrument

A—Barrel and vacuum cup.
B—Rod for removing plunger. This rod screws into the plunger C for purposes of removal from barrel.
C—Plunger which slides in barrel.
D—Cap fitting on end of barrel.
E—Screw stop attached to cap D and used to regulate distance through which plunger moves. Controls amount of vacuum in cup and prevents too great a movement of plunger.

The object of the plunger is twofold. First it acts as a regulator of the cavity produced and secondly, should the instrument be plunged directly into the vitreous, no more of the latter could be withdrawn than would fill the small cavity left by the movement of the plunger. In fact healthy vitreous will hardly pass through the needle-like tube, another safety factor.

When the plunger is correctly adjusted, it is impossible to withdraw more than one or two minims of vitreous under the most adverse conditions. This is in marked contrast with an open tube instrument where the whole contents of the globe can be withdrawn at one pull. Several of these vacuum instruments that I have seen are of such size that nothing could prevent a catastrophe should a slip occur.

To allow of sterilizing and cleansing, the barrel is made in two sections which may be unscrewed and the plunger removed by inserting a small threaded rod supplied for the purpose.

The construction of the instrument makes it possible to utilize any of the vacuum pumps now employed by nose and throat men as an excess of power need not be feared.

In Barraquer's instrument a vibratory motion is imparted to the lens with the idea that the zonula is more easily ruptured. My own opinion is that no vibratory motion is necessary for dislocation and may do more harm than good. Dr. Peter has already dwelt upon this feature in a recent paper.

As to using this instrument, my procedure has been to make the regular incision, possibly slightly larger than ordinary, bearing in mind that the lens must pass in its entirety. A conjunctival flap may or may not be used, according to the operator's preference. Personally, I do not attach the importance to a conjunctival flap that I formerly did, as applied to cataract extraction.

The incision made, a small iridectomy is done, by no means a Smith iridectomy. The vacuum instrument is now inserted through the lips of the wound and beneath the margins of the iris so that the cup lies in close proximity to the anterior capsule, the handle of the instrument being held midway between the vertical and horizontal axes of the cornea. After making sure that no iris is caught between cup and lens, and that good contact is had, the vacuum is applied by drawing through the rubber tube attached to the instrument, and held in the mouth. Now by tilting first downward, causing pressure to be brought into play upon the lower half of the zonula, followed by a rocking motion on the horizontal axis of the lens and transferring the pressure to the upper half of the lens, the latter is dislocated. Continuing this pressure and at the same time turning the instrument over, the cataractous lens is withdrawn, the cup beneath and the posterior surface of the lens in contact with the cornea.

No sutures are employed. The pillars of the coloboma are replaced by the spatula, atropin instilled, bichloride salve applied to the closed lids and bandage put on.

It seems to make little difference whether the eye is dressed on the second, third or any later day as far as healing is concerned. I see no particular advantage in opening an eye too soon when no symptoms present themselves to demand it. We do nothing but satisfy our curiosity in meddling with an unhealed incision and I am content to wait until the third day for the initial dressing. Of course, should our patient exhibit signs of pain or discomfort we may suspect something to be developing which would require an inspection of the wound. In this case it is justifiable to open at any time.

A word might be said of the anesthesia. Cocain is employed locally or, if you prefer something more uncomfortable, butyn. The Van Lint injection of novocain in the temple and lids I consider most valuable in relaxing the orbicularis, and I have adopted this method as a routine in all cataract extractions. It certainly does lessen squeezing. The principle thing to remember is to make the injection deep enough, rather than just beneath the skin.

In conclusion, I hope I will not be considered an advocate of any intracapsular operation. From what I have learned from personal experience I feel that when such excellent results may be had by employing the regular combined extraction with or without the subsequent needling, any operation which increases the dangers so markedly and offers no better or not as good end results, must be condemned absolutely. My hope is that the instrument described in this paper will make the road easier for those who will endeavor to use the intracapsular operation, as many will continue to do, until their better judgment tells them otherwise.

DISCUSSION

Dr. Burton Chance (Philadelphia, Pa.): To most of us, in Philadelphia, at least, the removal of the crystalline lens by electro-pneumatic-vibratory-suction is a distinct novelty and one fraught with possibilities of danger quite beyond the bounds which we should dare to assume. Especially is this the case with surgeons who have successfully removed cataracts by methods of external pressure, which methods have not caused escape of vitreous, nor been followed by secondary capsular membranes preventing the attainment of useful sight.

My colleague, Dr. Parker, is a most ingenious, dexterous person, and possesses the "surgeon's sense." The instrument he has devised is neatly adapted for insertion into the aqueous chamber, and without forcible application to the crystalline lens can be adjusted to the anterior surface. By gentle, moderate and wholly controlled suction the cup finally adheres to it, so that by a delicate maneuver the lenticular body can be drawn out of the globe.

This appliance is entirely within the control of the operator and is not like Barraquer's, subject to the accidents possible with an electric motor.

I had the opportunity to stand beside Barraquer when he operated on all our cases at Wills Hospital. He taught me many lessons that afternoon; yet I feel that I should not experiment with any vacuum-lens-extractor, and, singularly enough, Dr. Parker, who possesses still another quality, that of common sense, believes that he himself should not employ it. He presents his account of his operations and the details of his invention only that he might "point a moral, and adorn a tale."

Dr. Fred Fisher (Erie, Pa.): It was stated here a little while ago that a man should perfect an operation on the muscle and stick to it. If that applies externally it certainly should apply intra-ocularly. If anything comes out that is proved to be decidedly better than what we are doing, when it is perfected I think it behooves us to learn that method and stick to it. But the experimental stage I think should be left to the men who have large laboratories and lots of animals to try it on. Dr. Parker has a very ingenious instrument and in his hands it would undoubtedly do very well. But any of us would be liable to lose eyes where we certainly would not lose them doing the classical operation. I think it is better to leave experimentation to the man who has a large clinical laboratory and other means at his disposal so he may establish a technique.

DR. GEORGE E. DE SCHWEINITZ (Philadelphia, Pa.): I should like to present my personal compliments and thanks to Dr. Parker. When a young, enthusiastic, skillful ophthalmic surgeon prepares and reads a sound, common-sense paper, such as we have heard from Dr. Parker, he renders a public service.

DR. PARKER (in closing): In regard to Doctor Fisher's remarks concerning the utilizing of the eyes of animals for trying this operation, I have done this and found it most unsatisfactory, at least on the eyes of pigs. It was practically impossible to dislocate a lens in a pig's eye without destroying the lens itself. Consequently, the best results will be had on the human eye where sclerosis has already weakened the zonula and toughened the capsule.

PITTSBURGH ACADEMY OF MEDICINE

ABSTRACTS

GANGRENE OF LOWER EXTREMITY, COMPLICATING THE PUERPERIUM

R. M. ENTWISLE, M.D.

Puerperal sepsis, when it has advanced beyond the stage of a local pelvic condition, may be complicated by any variety of metatastic inflammation. Among these sequelæ is gangrene of an extremity. While apparently this is not a common result of postpartum infection and one which we confidently expect to have decreased in these days of lessened sepsis, there have been, nevertheless, a fair number of such cases reported in the past five years.

The principal causes of gangrene can be summed up as follows:

Cause No. 1—Embolus: An embolus can occur in two ways: (a) as a result of previous cardiac infection with resulting left heart thrombus formation, a piece of which is loosened in this acute condition; and (b) the possibility of a pelvic embolus entering the left heart through a patent foramen ovale.

Cause No. 2: Gangrene from a primary endarteritis or an endarteritis by extension of inflammation from neighboring veins.

Cause No. 3: Gangrene from total occlusion of the venous system secondary to thrombosis in the uterine wall.

As thrombo-phlebitis with extension into the deep veins of the leg is such a common complication of pregnancy and as gangrene of the leg is such an uncommon one it would appear that this is not the usual mode of production of this serious complication.

In the case to be reported, it is believed that the gangrene was due to an embolic process, secondary to endocarditis. The history of sudden onset in the second week after delivery, the evidences of pelvic peritonitis, septicemia, endocarditis and dry gangrene all tend toward this belief.

The treatment of gangrene complicating puerperal sepsis depends entirely upon the general condition of the patient. When it is considered that this is a complication of an already existing serious illness it will be readily appreciated that a recovery will be extremely unlikely. If the gangrene is of the dry type, a definite line of demarcation formed and the patient in an operable state, amputation should be done. If, on the other hand, it is of the moist infective type, amputation offers little and should not be attempted.

CASE REPORT

Mrs. K. S., female, white, age 44.

Chief Complaint: Pain and numbness in right leg. Numbness, bluish discoloration and paralysis of left leg, which was preceded by sharp pain. Burn on lateral aspect of the left leg.

Analysis of Chief Complaint: On October 28th patient gave birth to a 7 months' baby, the cause of premature delivery was perhaps a shock. No difficulty during labor; no instruments were used. During the first 2 weeks after the birth of child, patient says she was alright, except for a very slight, occasional chill, the first chill being the day after delivery. On November 11th, exactly two weeks postpartum, patient got up out of bed and when she tried to walk noticed numbness in her feet, and that they were hard to control. That night the patient was awakened with a sudden, sharp pain in her right foot, which lasted for only two hours. On November 13th the pain shifted to the left leg. In order to relieve the pain and numbness she applied witch-hazel, also tried to relieve the numbness by exposing the leg to the warmth of an open fire, but on account of the numbness she burned the leg before she realized it. On the same day, 11-13-23, the leg became blue, the next day the skin on the lateral aspect of the left leg began to peel off. On November 16, 1923, patient entered the hospital.

Cardiac: Just previous to the birth of her last child, patient was very dyspneic and had edema of the ankles. Heart showed a loud systolic rumble over the entire cardiac area.

Lower left extremity showed a large ulceration on the lateral aspect of her leg, the result of the above described burn. There was a marked bluish discoloration involving the leg from the knee down and including the ankle. Motion of the leg caused severe pain. There was marked numbness in the right foot and leg as far up as the knee. No bluish discoloration of the leg. There was marked pain in this leg on any attempt at motion. Posterior tibial pulse in right foot could be felt, but the anterior tibial pulse could not be felt.

Because of the very grave condition of the patient it was determined not to amputate the dry, gangrenous leg. There was believed present a peritonitis, followed by thrombo-phlebitis of the iliac vessels, and that the leg itself could not account for the severe condition. Patient grew steadily worse and died November 23d at 6 A. M.

Diagnosis: Pelvic Peritonitis, Thrombo-Phlebitis, Embolic Gangrene of Left Leg, Acute Endocarditis, Septicemia.

TREATMENT OF ARTERIOSCLEROSIS

FREDERICK B. UTLEY, M.D.

The treatment of arteriosclerosis may be divided into two headings, the preventive treatment, otherwise termed the causal treatment, and the palliative treatment, or the relief of symptoms after they have developed.

The preventive treatment means the removal or exclusion of all causes which have been so clearly outlined under etiology. This is the all-important phase of the subject, as arteriosclerosis, when developed in any of its various ways, is the cause directly or indirectly of the largest number of deaths of any of the diseases to-day.

There are no known means of restoring a diseased artery, and the process is well advanced before its presence is detected. Inasmuch as it cannot be recognized in its incipiency, attention must be directed to the known predisposing factors. The presence of these factors in a given individual is to be learned through frequent histories and physical examination of patients. If it is worth while to take an inventory of stock or to inspect machinery at stated intervals, how much more important is it to examine the human body thoroughly from time to time to remove any predisposition to a more serious defect! This, to be effective, must be started in childhood and should be carried out at least twice a year.

The causal therapy may be considered under five headings: (1) The removal of foci of infection. (2) The prevention of chronic intoxications. (3) Infections acute and chronic. (4) Lessening the wear and tear of life. (5) The hygienic treatment.

The importance of removing foci of infection has perhaps been interesting the medical profession more recently. Foci of infection should be removed wherever present in the body, provided such a procedure is consistent with safety. Teeth, tonsils, sinuses, ears, gall-bladder, appendix, genito-urinary tract of male and female should be thoroughly examined and infection removed. The prevention of chronic intoxications is essential, e. g., alcohol, tobacco, lead, intestinal stasis. Bowels should be kept in good condition by the appropriate diet and exercise.

It is probable that every acute infection or infectious disease leaves its damaging effect upon the blood vessels to a greater or less degree, and all should be shielded from them as far as possible. When present, the intoxication from them can be materially lessened by taking every means to increase fluid intake and to improve elimination by all avenues. Pulmonary tuberculosis, gonorrhea, rheumatic fever and syphilis in particular should be treated promptly and thoroughly to shorten the period of damage to vessel walls as much as possible.

That the wear and tear of life should be reduced to a minimum is only common sense. Physicians are the greatest offenders in this respect. As custodians of the physical well-being of the human race, they should set an example to the lay people in accomplishing the greatest amount of work with the least amount of wear and tear. The accomplishment of this is closely linked with the hygienic treatment and for this reason the two headings will be considered together.

In the first place, the diet should be of such character and in such amounts as to supply the body with fuel for energy and to keep the tissues renewed and no more. The diet should consist of enough protein to maintain nitrogen balance which is somewhere between 2/3 to 1 gram per kilogram of body weight for adults and 50 to 100% more for children, the remainder of the diet being supplied from fats and carbohydrates in such amounts as to meet the caloric requirements for the individual. Overweight should be avoided, as excess fat means a larger blood vessel bed which in turn means cardiac strain. In general, milk, eggs, cereals, fruits and vegetables should be used more freely, and not so much meats or sweets. The excessive use of meat and sweets, so common among Americans, can only result in damage to liver, kidneys and blood vessels. It is also better to distribute the food taken more evenly over the three meals rather than to eat an enormously large dinner at night which engorges the digestive system and liver, thus overtaxing them. If the elimination of meat, meat broths, spices, alcohol and salt from a dietary in the presence of arteriosclerosis and hypertension is to be stressed, certainly it is just as wise to reduce their use to a minimum in the prevention of arteriosclerosis. A sufficient amount of water should be taken during the day to permit free elimination by skin, bowel and kidneys. It is probable that tea and coffee should be used abstemiously, if at all, alcohol interdicted and tobacco only in moderation.

Exercise, preferably in the open air, should be enjoyed in an appropriate manner to improve the functioning of all organs, and hence to favor elimination. In this connection, the importance of relaxation and recreation cannot be overestimated in lessening the wear and tear on the human system. We have long since learned the importance of this in the care of machinery, but we have been slow in effectively adopting this in the care of humans.

The importance of sleep for mental and physical recuperation is often overlooked in this day of mad rushing in work and pleasure seeking. It is a fair statement that the average man and woman in the maelstrom of life to-day does not get enough sleep or relaxation in the prone position. An average of eight or nine hours out of each twenty-four spent in this way is possibly the optimum.

And finally, in our work, hurry and worry should be avoided. Work of any nature is health giving, but hurry and worry are destructive. A diversification of interests is always desirable, while moderation in all things and the practice of self-control are the chief factors in the prevention of arteriosclerosis.

After arteriosclerosis has developed, certain measures may be outlined for the comfort and welfare of the patient. In brief, all of the above measures are to be outlined more strictly and the output of energy proportionately reduced. An equable climate is desirable and those who are denied such should avoid undue exposure to cold and wet by appropriate clothing. Relaxation of the vessels of the skin and peripheral arteries is desired, hence warm baths, woolen clothing and moderate exercise are advised. For those who cannot exercise sufficiently, massage is a good substitute. Hydrotherapy is helpful in improving circulation and elimination, but the extremes of heat and cold should be avoided, especially in the presence of hypertension. It is for this reason that the popular Turkish bath, as ordinarily administered, should be condemned in the presence of arteriosclerosis and hypertension. Mechano- and electrotherapy, as evidenced by high frequency current and autocondensation, may make the patient temporarily comfortable, but evidence is lacking that they produce a lasting benefit. In the same way, radium emanations may do good psychically, but they have no bearing upon the pathological process in the vessels or upon blood pressure. Diathermy is too recent an acquisition to our armamentarium to speak of it with finality in its effect upon these conditions; but it can probably be classed with the above therapies as far as arteriosclerosis is concerned.

Of the many drugs used in arteriosclerosis, the iodids merit first consideration. They have no bearing upon the fatty or hyalin degeneration of the vessel wall, or the subsequent calcification. They are of greatest service in arteriosclerosis associated with lues and help in the amelioration of the cerebral and asthmatic symptoms.

The special symptoms of arteriosclerosis should be met as indicated. For example, the insomnia is often relieved by milk and crackers or a warm bath at bedtime, or bromides, chloral or veronal in appropriate dosage; the head fulness or vertigo by hydrotherapy, attention to the gastro-intestinal tract, and alkali diuretics. And if a severe headache exists, it may be relieved by acetphenetidin or acetyl salicylic acid alone or combined with caffein citrate. Nocturnal polyuria is perhaps best combated by reducing fluids to a minimum after three or four p. m., and eliminating all irritants such as condiments and meat extractives from the diet. The paresthesias may be best met with counterirritants and massage in the direction of the venous return.

THE ETIOLOGY OF ARTERIOSCLEROSIS

W. W. G. MACLACHLAN, M.D.

The etiology of arteriosclerosis is difficult oftentimes to explain satisfactorily with the development of arteriosclerosis in a given case. In the vast majority of instances, its onset is slow and unnoticed until it is quite well developed. As in some other conditions, there is no one known cause, but there are factors of every conceivable type concerned in the thickening of vessel walls. It is probable that heredity is a factor, in that some families have poor blood vessels to begin with and others have exceptionally strong ones. Hard muscular work associated with local hypertension is also a factor, as is seen in the blacksmith's right arm and in the traffic officer's legs. Wear and tear of life in general is an important factor, particularly worry and possible mental overactivity.

Of the various infections which are known to cause arteriosclerosis, of course syphilis heads the list; then follow acute rheumatic fever, typhoid fever, scarlet fever, diphtheria and influenza. The various causes of acute nephritis may also be looked upon as causes of arteriosclerosis. Chronic infections are believed to be an important factor, such as infected teeth, tonsils, sinuses, gall-bladder, appendix, and the genito-urinary tract.

Toxic agents are also a factor, whether ingested or developed within the body. Of the former, tobacco, alcohol, tea and coffee in excess are contributing factors, while of the latter, intestinal toxemia is the best example.

CARDIAC CONDITIONS IN ARTERIOSCLEROSIS

A. H. COLWELL, M.D.

Peripheral or regional arteriosclerosis may occur without any cardiac dysfunction whatsoever. However, this is unusual and in the great majority of instances the occurrence of arteriosclerosis presupposes a more or less marked reduction in the functional capacity of the heart.

The most common cardiac symptoms in this condition are found in association with hypertension which is, probably, the most frequent clinical manifestation of arteriosclerosis.

Paroxysmal dyspnea, various types of precordial paresthesia or pain, precordial, carotid or epigastric palpitation, vertigo, consciousness of peripheral pulsations, etc., may be prominent. In all these patients, unless life is terminated relatively early by cerebral hemorrhage or rupture of aneurysm, the signs of myocardial degeneration eventually appear. The degree of heart dysfunction may be moderate or extreme and marked dilatation of the heart with relative mitral and aortic insufficiency may occur. Dyspnea, precordial discomfort, edema, serous effusion in pleura, pericardium or peritoneum are frequently present. At times pulmonary edema is much more prominent than edema in the region of the systemic vascular system. Any type of the pathological disturbance of the heart mechanism may be present, the most frequent being permature contractions (or extra systoles) and auricular fibrillation. If the heart mechanism remains regular, pulsus alternans is frequently found.

Perhaps the most frequent of cardiac symptoms associated with arteriosclerosis are those resulting from degenerative changes in the aorta or coronary vessels. In this group deficient heart nutrition is the chief cause of cardiac degeneration. One of the outstanding symptoms is angina pectoris, occurring in varying degrees of severity and frequency. Paroxysmal dyspnea, often nocturnal, or induced by very slight effort or emotion and practically always associated with angina, often resembling asthma or associated with pulmonary edema is also frequent. Where the myocardial degeneration resulted from obstruction of the coronary arteries at their orifices because of disease of the base of the aorta, rather than from degeneration of these arteries themselves, angina pectoris may be entirely absent but the other symptoms are the same. Nothing will ever supplant the x-ray in determining that the cardiac symptoms in a given case are due to aneurysm, for the great majority of aneurysms or aneurysmal dilatations are at present found by this means.

The most common heart murmur found in association with arteriosclerosis is the aortic systolic murmur. This is heard best, as a rule at the aortic valve area just to the right of the sternum in the second interspace. It is usually soft and blowing but may be quite harsh. The classical distribution is along the course of the right carotid and subclavian arteries, but it is at times transmitted downwards and to the left and may be heard very well at the apex of the heart. The probable reason for this is that the majority of aortic systolic murmurs are produced in the aorta and not by sclerosed aortic valves.

Pulsus alternans, a disturbance of the contractile power of the heart muscle and an expression of myocardial exhaustion is found more often in heart disease associated with arteriosclerosis than in any other etiologic group. Its recognition is easy, its portent grave.

THE CLINICAL SYMPTOMS OF FUNCTIONAL DISTURBANCE OF THE KIDNEYS

R. R. SNOWDEN, M.D.

The effects on the kidney secreting mechanism of a sclerosis of the renal vessels are slow and profound. Beginning with a mild degeneration, affecting for the most part the golmeruli, accompanied by the formation of contracting scar tissue, there slowly develops the granular contracted kidney, with resulting serious impairment of function. The pathological process being, in most cases, diffuse, the functional impairment is profound and results in difficulty in excretion of most of the groups of waste products. The evidence of this functional impairment is to be found in clinical symptoms and in laboratory tests; the urinary findings in regard to albumin and casts, give no indication whatsoever of functional capacity.

The earliest clinical symptom of failing function in this type of renal degeneration is polyuria, and especially nocturia. This symptom is due to the inability of the kidney to concentrate the waste products which it must excrete; and to compensate for this inability to concentrate, a larger volume of water is secreted, resulting in the excretion of a larger volume of urine, both day and night, of low specific gravity.

The Nitrogen Group: When, at last, the functional capacity of the kidneys has been so reduced that retention of waste products begins, then a definite train of symptoms develops. These, of course, vary with the nature of the waste products which are being retained. Retention of waste nitrogen gives rise to widespread effects. There is, first, an increase in the blood pressure; second, there is irritation of the central nervous system, causing headaches, insomnia, irritability, and eventually convulsions; third, gastro-intestinal symptoms which are mostly vague and variable, such as gastric irritation, nausea and constipation.

The Retention of Acid Bodies: When acids are retained, these are neutralized by carbonates and eventually ammonia; these deplete the alkalies of the blood and tissues, giving rise to shortness of breath; in the final stages of this type of acidosis, drowsiness and coma develop.

Retention of Chlorides: When salt is retained, water is also held back, in order to maintain the body fluids at the isotonic state, and as a result edema develops.

Retention of Water: When water is retained, chlorides are also held back and the clinical picture is identical with that of salt retention.

NEUROLOGICAL MANIFESTATIONS OF ARTERIOSCLEROSIS

GEORGE WRIGHT, M.D.

Neurological manifestations of arteriosclerosis seldom are seen before the age of forty-five. It is well to recall, however, that peripheral arteriosclerosis is not necessarily presumptive evidence of cerebral arteriosclerosis; and *per contra,* cerebral arteriosclerosis may exist without the usual peripheral arteriosclerosis; and finally that definite sclerosis of cerebral vessels may exist without any clinical signs whatsoever.

One may best classify cerebral arteriosclerosis into the focal, multiple and diffuse forms. Single focal symptoms are the more common, as exemplified by the ordinary apoplectic stroke with motor paralysis, but it is well to remember that there are large areas of the brain not concerned in movement that may be damaged by local vascular lesions and escape notice unless looked for, particularly disturbance of vision, coördination and balance.

Multiple cerebral lesions are not so common. A careful anatomical interpretation of symptoms will indicate this diagnosis. One of the commoner types seen is pseudobulbar palsy in which, because of bilateral lesions, there are paralytic phenomena affecting both sides of the body.

Diffuse cerebral arteriosclerosis is common. It may be associated with single lesions or multiple lesions producing outstanding physical signs —when the diagnosis, of course, is easy—or be without such signs and express itself chiefly in the mental symptoms so characteristic of this division. There are memory defects especially for recent events, impaired judgment, irritability of temper, and emotional disturbances. In accordance with these two pathological classifications, clinically we broadly divide the senile psychosis into first, arteriosclerotic dementia, and second, senile dementia proper. By careful physical, neurological and psychiatric study, differentiation may be made.

Monosymptoms are conditions that are at times terrible burdens to the patient and physicians. I refer to periodic headaches of intense type, vertigoes, head noises, and rarely epilepsies. The pathological basis for these, and indeed for all arteriosclerotic manifestations, is deficient blood supply, constant or intermittent (as especially in cerebral claudication), accumulated waste products, and definite defects (due to hemorrhagic thrombosis). Relief is dependent on the response of these to treatment, and so a diet may help in some cases, the judicious use of small doses of bromides and chloral may give relief in other cases, as for example, some headaches and vertigoes, and finally, nothing at all helps in still other cases.

Frederick B. Utley, M.D., Secretary.

THE PITTSBURGH OPHTHALMOLOGICAL SOCIETY

December 10, 1923

DR. E. B. HECKEL, Presiding

TUBERCULOSIS OF THE IRIS CURED WITH TUBERCULIN

Dr. Edward Stieren reported the case of Felix Linden, a Swede, aged 25, who appeared June 28, 1923, with a vague history of having received some dust from tar paper in his left eye.

The eye was irritable, with considerable photophobia and lacrimation. At the pupillary edge, below, there was a brownish-red elevation with a one millimeter base. Under atropin, the eye became quiet in twenty-four hours, the pupil dilating freely in all directions except below, giving the pupil a kidney shape, although there was no posterior synechia.

A diagnosis of either tubercle or gumma of the iris was made. The size and site of the lesion was in favor of the latter, but the absence of inflammatory phenomena, so universal in gummata, strengthened the tuberculous belief and the patient was accordingly admitted to the Tuberculosis League Hospital.

The wisdom of this is attested by the accompanying letter from Dr. Marcy after the patient had been cured by successive injections of Koch's O.T. The tubercule gradually became smaller from day to day and had entirely disappeared seventeen days after admission, the resulting vision being 6/5-. The pupil did not regain its normal shape, but remained flattened at the bottom. There is a round area of atrophy of the iris at the site of tubercle through which the light shines on transilluminating.

"The following is the summary of our findings in the case of Felix Linden, whom you recently referred to the Tuberculosis League Hospital.

"Admitted to the Hospital complaining of dimness of vision in the left eye and photophobia, with suspected tubercle on left iris.

"Physical examination: Height 5 ft., 7½ in.; weight 143 lbs. Normal development. Well nourished and general appearance good. Physical examination of chest was negative except for slight increase in breath sounds over the left hilus region. Left pupil dilated and irregular. A small pinhead-sized nodule was present on iris.

"Dental examination: General condition of teeth was good. Dentist recommended extraction of one tooth.

"Stereoscopic x-ray plates of the chest showed the following: The right lung field fairly clear throughout. The right root is broad with numerous striations, one of which extends up into the apex. The left apex is clear. Inner halves of first and second interspaces show faint mottling. Rest of lung field clear. The left root is fairly broad with striations extending up into the apex. Heart and mediastinum normally placed. Other features negative. Plates suggest an old tuberculous infiltration of the left hilus.

"Temperature, normal. Pulse, average, 72.

"Repeated examinations of sputum were negative for tubercle bacilli.

"Urine showed very slight trace of albumin but otherwise was negative.

"Blood pressure: Systolic 132; diastolic 84.

"Blood Wassermann, negative.

"Intradermal injection .000001 gms. Koch's O. T. was faintly positive. The dose was increased .00001 gms., .00005 gms. and finally .0001 gms. This final dose gave very strong local reaction without focal or constitutional disturbance and should be the dose continued at two weeks intervals if further tuberculin treatment is considered advisable. C. Howard Marcy, M.D."

CLOSURE OF BRANCH OF CENTRAL RETINAL ARTERY

Dr. George H. Shuman presented the case of P. J. K., male, aged 30 years, who came on November 3, 1923, for obscured vision in right eye.

Two days previously, just after having driven an automobile to work in the morning, patient experienced a sensation in his right eye which he described as feeling as though he were going from a light into a dark room. There was no pain or other subjective symptoms. Ophthalmoscopic examination revealed a typical picture of closure of the supratemporal branch of the central retinal artery. An area of opaque retina, triangular in shape, with apex at the disc, was seen in the superior temporal quadrant. Its inferior portion, which appeared quite white in color, was sharply differentiated from the normal retina below by a wavy border which passed through the fovea centralis. The superior portion faded gradually into the normal red fundus.

The diagnosis was clinched at the outset by the fact that a broken column of blood, the so-called "granular current," was seen in the supratemporal branch of the central retina artery when the ophthalmoscope was first approached to the eye for examination of the fundus details by the direct method. This was not seen again after patient's first visit. The fundus was otherwise negative and showed no evidence of angiosclerosis. Central vision was 20/200. There was a positive and absolute scotoma in the inferior nasal field.

Patient stated that he has "heart trouble," which was found, on inquiry of his physician, Dr. I. H. Alexander, to be an endocarditis of long standing. The occlusion is therefore probably embolic in character.

Left eye had normal vision and showed no abnormality or evidence of angiosclerosis.

HERPES ZOSTER OPHTHALMICUS

Dr. Edward A. Weisser reported the case of W. M., aged 6, who was first seen on October 21, 1923, with a history of right eye having been sore one week, with photophobia and increased lacrimation.

Diagnosis of herpes zoster ophthalmicus was easily made from vesicles along the right trigeminus, first branch, from the upper lid to the scalp. The cornea was likewise involved, with intense irritation and some ciliary injection. The child was put on atropin, dionin, bichlorid ointment and pressure bandage. Zinc oxid was applied to the skin lesions.

The vesicles on the skin became purulent, then broke down, healing with scars which are still present. Corneal vesicles likewise broke down, leaving clean ulcers, which healed with scars.

All injection, photophobia and increased lacrimation have disappeared and the child is using dionin and bichlorid in the hope of absorbing the scars.

This case was reported by Dr. Weisser because it is the first case of herpes zoster ophthalmicus he has seen in a child.

George H. Shuman, M.D., Secretary.

CASE REPORTS

AMEBIC COLITIS WITH SECONDARY ABSCESSES IN THE LIVER AND LUNG*

Frank Hammond Krusen, M.D.,
and
Bruce L. Fleming, M.D.
PHILADELPHIA, PA.

The patient, J. C. F., an adult white male, aged 38 years, was admitted to the Jefferson Hospital, Department for Diseases of the Chest, service of Drs. McCrae and Funk, on November 12, 1921, having been sent from another Philadelphia hospital with a diagnosis of pulmonary tuberculosis.

His mother and two aunts had died of pulmonary tuberculosis. He stated that he had suffered from pleurisy in August, 1921, the attack lasting two weeks. He gave a vague history of an attack of "malaria" in 1915, while in Missouri, lasting eight weeks, but said that he had had no chill during this illness. The patient was a heavy drinker and smoker, and had traveled over a large portion of this country. He dated the onset of his illness from July 15, 1921, when he developed pain under the right costal margin and in the lumbar region. Cough, expectoration and night-sweats were troublesome from the onset.

On August 15, 1921, one month after onset, he had a frank pulmonary hemorrhage. On admission, he had a severe cough, productive of a large amount of bloody, brownish sputum. The weight loss was 28 lbs. in two years.

Physical Examination: The patient was an undernourished adult white male. Dyspnea and cyanosis were constantly present. The chest was fairly well developed, and respiratory movements were generally limited. On the left side, the percussion note was resonant throughout, while on the right side, there was slight retraction beneath the clavicle. The right side was almost immobile, particularly toward the base. Vocal fremitus was increased over the upper right chest and greatly diminished below the angle of the scapula. The note was hyperresonant over the upper chest, with impairment approaching flatness from the angle of the scapula to the base posteriorly. The breath sounds were distant and blowing over this dull area, with a few crackling râles in the same region.

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*From the Jefferson Medical College Hospital.

The abdomen was negative for rigidity, masses or tenderness. The liver was not enlarged, nor was it tender.

X-Ray Examination: "Right diaphragm fixed. Thickened pleura right base. There is an outline possibly of a mass, in the right basal region. No evidence of free fluid, either anteroposterior or lateral view. It is not at all clear that there is any fluid present in this chest." No x-ray evidence of apical lesion.

Laboratory Findings: The sputum was examined daily over a long period, and was persistently negative for tubercle bacilli. Sputum smears showed nothing but disintegrating pus cells and amorphous granular material. Entameba histolytica was not found. Urine was practically normal. Owing to the lack of typical clinical evidence of tuberculous lesion, the x-ray findings, and the persistently negative sputum, a diagnosis of nontuberculous abscess of the right base was made.

Clinical Course: The patient, who was extremely ill on admission, grew gradually worse, and three weeks later developed severe diarrhea, and on December 9, 1921, died. Necropsy was performed on the same day.

Necropsy Findings: The important points were as follows: The upper and posterior surfaces of the liver were densely adherent to the diaphragm. The entire lower lobe of the right lung was densely adherent to the thoracic wall and to the diaphragm. On breaking up these dense adhesions, a large cavity, occupying the greater portion of the lower lobe, was exposed, and from this there escaped a considerable amount of pinkish-brown material, possessing a very foul odor—the typical anchovy-sauce-like pus. The abscess wall was shaggy and necrotic. On examining the diaphragm at the base of the right lung, an opening was found surrounded by dense adhesions. This opening was continuous with the subdiaphragmatic space. On attempting to break up the adhesions surrounding the liver, the diaphragmatic opening was found, and a dense fibrous capsule was noted extending into the liver substance, surrounding a large necrotic area. The wall of this area was clearly defined, and the cavity contained necrotic material. Smears from the abscess in the liver showed many large granular cells, some of which manifested typical ameboid motion.

The mucosa of the entire colon from the ileocecal valve to the rectum was markedly inflamed and ulcerated. The ulcers were moist. Some were superficial with well defined margins, and in places they were continuous. The inflammatory lesion was very well defined at the junction of the ileocecal valve.

Histologic sections from the ulcers in the colon showed many ameba in the floors and in the submucous and muscular coats of the gut. Sections from walls of liver and lung abscesses presented a similar appearance.

Comment: This case seems of interest not only because of its rarity, at least in this climate, but clinically because of the difficulty of differentiation from pulmonary tuberculosis. No attempt has been made to collect all the literature on the subject, but it is interesting to note that a somewhat similar case was reported before the Philadelphia Pathological Society on February 24, 1921, by Dr. Hugh M. Miller, in which instance there was a subdiaphragmatic abscess from another cause, with a secondary abscess of the lung. In his case also, there was pain in the side, with loss of weight, and the patient died in a tuberculosis ward, the clinical diagnosis being pulmonary tuberculosis.

The clinical signs in a typical case of liver abscess are, according to Stitt, moist crepitation at the right base, dry cough, fever, evening sweats, anemia and emaciation, all of which "may suggest tuberculosis," and all of which were present in our case.

Amebic dysentery may come on insidiously, and frequently the first evidence of its presence may be found at autopsy. In our case, the patient showed no symptoms or signs below the diaphragm, except lumbar pain, and a diarrhea which did not develop until shortly before death, and which might have been tuberculous in origin.

Our patient gave a history of extreme intemperance. In forty cases of liver abscess, Waring noted intemperance in 67.5%. Stitt stated that authorities generally insist upon the importance of the abuse of alcohol as a predisposing factor in the causation of liver abscess. In individuals with liver abscess, there is generally a leukocytosis of from 15,000 to 20,000, with an increase in the number of large mononuclear cells, there usually being 10% to 15%. In our case, there was a leukocytosis of 20,800 and 11% large mononuclear cells.

The liver abscess in this case was in the most frequent site; i. e., in the superior and posterior part of the right lobe, near its surface.

Statistics show that liver abscess is secondary to amebic dysentery in about 20% of the cases. According to Cyr, about 35% of the untreated cases (59 in 159) of liver abscess tend to rupture into the lung.

PHILADELPHIA GENERAL HOSPITAL

MONTHLY CASE REPORTS

BY THE STAFF OF THE PSYCHOPATHIC DEPARTMENT

The following case is reported with the view of calling attention to a frequent cause of mental disorder and the hopefulness of recovery with early recognition of the cause and appropriate treatment.

M. N., aged fifty-eight, was admitted to the Neuropsychiatric Wards violently excited. Three weeks before admission he evidenced an impression that people were imposing upon him. In a short time he became very agitated, broke the windows in the parlor and fought with his brothers and sisters. His family history was negative. He had always been well and was an active lawyer. One point in the history should be emphasized: for thirteen years he had been separated from his wife, which had been a source of great worry to him, thus causing an unstable emotional condition and in turn making him more mentally susceptible to toxic influence. If the physical cause had been recognized at once and appropriately treated no doubt he could have been saved a prolonged and painful psychosis.

On admission he was noisy, agitated, sleepless, and constantly talking and discoursing in an expansive manner in a loud voice. He was very resistive and violent at times, was evidently under great tension, heard and responded to imaginary voices, and was always extremely anxious and depressed. Physical examination showed that aside from unequal pupils which reacted sluggishly to light and slightly in accommodation, unequal knee jerks, which were diminished, and absent abdominal reflexes there was nothing in the nervous system that was positive. Serology was negative. Chest was negative. There was no disease of the heart, but the spleen was palpable and the liver slightly enlarged. The tongue was coated, dry and red. The important symptoms were swollen glands in the anterior cervical region and red and swollen pharynx. In a short time the temperature began to rise, reaching 101°, and thereafter ran an irregular course for six days. At the same time the pulse was quick, averaging 100. Some decayed teeth had been removed, but one root still remained which was evidently diseased. The important feature was the infection in the right tonsil which shortly became evident. Blood cultures were negative, the collodial gold curve was normal, and he had 25900 W.B.C. with 88% polymorphonuclear cells. The blood chemistry was not significant. Blood urea was 10 mg.; uric acid, 3.8 mg.; sugar, 90 mg.; and the C.O. combining power 251 c.c. Further blood counts showed continued leucocytosis. A small piece of the tissue from the tonsillar region was examined microscopically and the section showed lymphoid tissue with some fibrosis, congestion from red and white blood cells but with no definite pus formation. An incision revealed pus formation and the abscess was drained. The infection was undoubtedly a profound one as an intense toxemia resulted. The patient lost weight rapidly, the pulse was rapid and the general condition very poor. *With the improvement in the throat condition, however, the mental symptoms gradually subsided.* After forced feeding with raw eggs and large quantities of milk, efforts at elimination, continuous bath and rest, at the end of a month the patient had entirely recovered his normal mental condition and was discharged with advice to upbuild the general physical state. An early recognition of the cause of these mental symptoms and its prompt removal could certainly have prevented such an intense reaction as this man showed.

Toxic psychosis develops a form of mental derangement which responds in most instances to the removal of the focus of infection. The lesson, therefore, to be learned is to seek in a most exhaustive manner for a source of infection when the mental symptoms show great excitement, agitation, paranoid ideas, and hallucinations.

John H. W. Rhein, M.D.
Visiting Physician to the Neuropsychiatric Dept.

WHY THE MEDICAL PROFESSION SHOULD BE RELIEVED FROM PRESENT TAX BURDENS

The medical profession has three causes for complaint concerning federal taxation:

1. That under the Harrison Narcotic Act, as amended by the Revenue Act of 1918, an excessive and now unnecessary war tax is imposed on the profession.
2. That the physician is compelled to pay an income tax on money paid out by him for certain expenses of his profession, and is thus taxed on an amount in excess of his net income.
3. That the physician is taxed on his earned income at the same rate that he and taxpayers generally are taxed on income from investments, etc.

The following memoranda are submitted to aid the profession in making a clear statement of the situation in presenting to Congress its appeal for relief.

Arguments Against the Continuance of the War Tax under the Harrison Narcotic Act.—In protesting against the continuance of taxation under the Harrison Narcotic Act at the rate fixed by the Revenue Act of 1918 as a war measure, three dollars a year, it should be made clear that the medical profession is not protesting against the Harrison Narcotic Act itself, nor against such taxation under it as may be necessary to give the federal government jurisdiction. The Harrison Narcotic Act originally fixed a tax of one dollar a year, which was deemed sufficient to secure federal jurisdiction, and of that tax no complaint was ever made. Any tax in excess of the minimum amount necessary to give federal jurisdiction is essentially an occupation tax on the physician and as such represents a discrimination against the medical profession, since federal occupation taxes are not imposed on other professions. So far as this tax may be passed on by physicians to their patients, it is a tax on the sick and injured, falling on them because they are sick and injured. The tax collected under the Harrison Narcotic Act is paid into the general revenues of the United States, and does not go directly toward the enforcement of the act. The amount collected under this act from all sources is largely in excess of the amount expended for the enforcement of the act—in 1922, for instance, $610,311.13 in excess of the amount expended during the same year. In any event, however, there is no reason for imposing on the medical profession any greater part of the cost for enforcing the law than is imposed on any other group in the community, for the law is enacted for the benefit of the community and not for the benefit of the medical profession.

Argument in Favor of the Deductibility of Traveling Expenses and of the Cost of Postgraduate Study, as Expenses of the Practice of Medicine, in Computing the Physician's Income Tax.—In protesting against so much of the present income tax law as is construed as denying to the physician the right to deduct, in computing his federal income tax, expenses incurred in attending meetings of medical societies, and in postgraduate study, the following facts should be borne in mind. The present law provides that the physician, in common with all other business and professional men, in computing his net income, may deduct, "all the ordinary and necessary expenses paid or incurred during the taxable year in carrying on any trade or business, including a reasonable allowance for salaries or other compensation for personal services actually rendered; *traveling expenses (including the entire amount expended for meals and lodging) while away from home in the pursuit of a trade or business;* . . ." "The Commissioner of Internal Revenue has ruled, however, that a physician who is away from home in attendance at a meeting of a medical society or while pursuing postgraduate study is not away from home in the pursuit of his profession and that the expenses incident to such travel and study are not ordinary and necessary expenses of the practice of medicine. Such expenses are regarded by the commissioner as merely personal expenses, such as are covered by the provisions of the income tax law which allow to all taxpayers, without regard to their callings or to the necessity for travel imposed by such callings, certain exemptions to cover personal expenses. Obviously, this ruling ignores the fact that such expenses arise in the case of a physician as incidents of his professional work.

The commissioner's interpretation of the law in this respect is out of harmony, too, with the provisions of the law generally as they relate to medical practice. The physician may, for instance, deduct as a professional expense membership dues paid to medical societies, but the ruling complained of penalizes him if he undertakes to make such a membership effective by attending the meeting of such societies. The incongruity of the ruling is further shown by the fact that if a physician travels from one place to another to consult with a fellow physician regarding the treatment of a single patient, he can deduct the expenses of such travel, whereas if the same physician travels between the very same places to confer with a hundred of his fellow physicians in consultation concerning the treatment of patients generally, he cannot deduct his expenses. If a physician travels from one place to another to examine one patient in order to apply the knowledge and skill thus acquired for the benefit of that patient, his traveling expenses are deductible; but if he travels from one place to another to engage in postgraduate study of many patients in order to make the knowledge and skill obtained available to the entire community which he serves, he cannot deduct traveling expenses, but must pay an income tax on them.

Obviously, to discourage meetings of medical societies and of postgraduate study, as the prevailing construction of the Revenue Act of 1921 now does, is poor public policy. Meeting in such societies and in the course of such study tends to conserve and promote public health. It tends, too, to increase federal revenues by increasing the earning capacity of the physician. Moreover, by bringing together physicians from various parts of the country, it tends to break down local prejudices and to encourage broader national unity and patriotism. Such travel ought, therefore, to be encouraged, not discouraged. * * * *

Procedure to Make Requests and Protests Effective.—State and county societies should adopt resolutions, and file copies of them with the Committee on Ways and Means of the House of Representatives, and the Committee on Finance of the Senate. This can be best done through an interested senator or representative in Washington. Copies of such resolutions should be sent also to all senators and representatives from the state from which the request and protest comes. Individual physicians should write to the senators and representatives who represent them in Congress, acquainting them with the views of the profession regarding the situation. This should be done immediately, as action on the pending bill will probably be not long delayed.

JOUR. A. M. A., JAN. 26, 1924.

COMMUNICATIONS

To the Editor of THE ATLANTIC MEDICAL JOURNAL,
Harrisburg, Pa.

The following resolution was presented at a meeting of The Philadelphia County Medical Society, February 13th, 1924, and was unanimously endorsed. It was also ordered to be sent for publication to THE ATLANTIC MEDICAL JOURNAL. If it is published, it will be much appreciated.

"WHEREAS, President Frontz of the Medical Society of the State of Pennsylvania has deemed it necessary to appoint a Commission on Workmen's Compensation, and

WHEREAS, The object of this commission will be to formulate a bill for the next Legislature which will endeavor to satisfy all concerned; therefore

Be It Resolved; That The Philadelphia County Medical Society endorses the program of the Commission on Compensation of The Medical Society of the State of Pennsylvania."

Also the following resolution:

"WHEREAS, The members of The Philadelphia County Medical Society and other physicians practicing the profession of medicine and surgery, in the pursuit of their callings use up their only asset and capital, namely their life and health; and

"WHEREAS, The majority of those practicing in medicine and surgery give a large part of their time to hospital and other public medical service for which they receive no remuneration; and

"WHEREAS, The work of the doctor is altogether personal, his income ceasing during his absence or illness, while that of the average business man goes on; and

"WHEREAS, The existing income tax laws seem to be unfair when the positions of the doctor and business man are contrasted;

"Be It Therefore Resolved: That the Board of Directors of The Philadelphia County Medical Society does hereby indorse the Mellon plan for tax reduction, and does instruct its President and Secretary so to inform the Secretary of the Treasury of the United States, the United States Senators from the State of Pennsylvania and the Representatives in Congress from Philadelphia, and to send a copy of this resolution for publication to *The Weekly Roster* and the ATLANTIC MEDICAL JOURNAL." FRANKLIN M. CRISPIN,
Executive Secretary.

RESOLUTION

The following resolution was adopted at a meeting of the Philadelphia County Medical Society held February 27, 1924, and it was ordered that the resolution be sent for publication to THE ATLANTIC MEDICAL JOURNAL:

Resolved, That the President of the Philadelphia County Medical Society be, and now is, a member of its committee on The Sesqui-Centennial Celebration of the Signing of the Declaration of Independence. Also

Resolved, That that committee report at the next meeting of this society a plan for assembling in Philadelphia in 1926, in association with the Medical Society of the State of Pennsylvania, a National Medical Congress, the purpose of which shall be to emphasize the progress of medical and surgical science and hygiene in the United States of America in the last fifty years.

FRANKLIN M. CRISPIN, Executive Secretary.

Dr. O. Pine queries:

Is there a "med" with wit so dead—
Pathologic report before him spread,
Its verbose vagueness numbing head,
Who has not shrieked, "What has it said?"

Dr. O. Pine queries: An innocent interne of studious and inquiring turn of mind asks why some of his superiors who so indefatigably address concourses of citizens in the laudable endeavor to propagate health and care and cure among the public have neither the time nor inclination apparently to satisfy his thirst for more knowledge when he inquires about medical or surgical procedures occupying the moment. Is it not just as important to educate subordinates as the dear public which they are destined to serve?

THE ATLANTIC
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EDITORIALS

SAY IT WITH VOTES

Some enterprising florist coined the phrase "Say it with flowers." That saying has been taken up throughout the country until now it is one of the best known advertising slogans extant.

What more attractive wording could be suggested? Saying it with flowers offers a medium for the expression of almost every sentiment—esteem, affection, reverence, sorrow. Not only has this slogan profited the florist financially, but it has increased the popular use of some of nature's choicest products, and has enhanced the esteem in which he is held as a purveyor of these products.

The medical profession has a similar condition to meet. We want to increase our prestige with the members of the Legislature. Let us, then, adopt a similar slogan: "SAY IT WITH VOTES."

The time will soon be here when you can express your appreciation to those who will give us a square deal in the Assembly, as well as administer—in some instances—an effective rebuke to those who have proved false and have not been true to their word, to those who seek the office of senator or representative but have no regard for the health and physical welfare of the people. To all these you should *say it with votes*.

Don't forget that unless it is said with votes at the spring primaries and the fall elections, we may need the flowers to express our regrets. Don't be a "dead one."

SHIPS THAT PASS IN THE NIGHT

The progress of medicine, though slow, is always in the right direction. Now and then a vista on the horizon heartens the soul of the earnest worker and seeker after light.

The x-ray, radium and insulin stand out as beacons and rewards, covering many years of faithful effort on the part of individuals or succession of generations of workers.

The shores of time are strewn with wrecks of fanciful and pseudoscientific claims, drugs, schemes and what not. They cover Hermann's turtle serum in tuberculosis; innumerable discoveries of other cures for tuberculosis, cancer, rheumatism, diabetes and pneumonia. The most recent one headed directly for the rocks is the Abrams test.

From time immemorial mankind has sought for the elixir of life, so that formulas, incantatious medicine and operations for gland rejuvenation, the cure of arteriosclerosis and prevention of senility have a large following recorded, largely from the ranks of those who have dissipated their enerigies in early life and who are thus deprived of the reward of viewing the approach of senescence with the true philosophic attitude that marks the well ordered and evenly balanced man.

Science, and the medical profession in general always welcomes true, honest, consistent workers whose prime, though not necessarily exclusive objective is the welfare of mankind.

The medical man should look upon any movement savoring of commercialism with strong suspicion and should keep hands off until the merits of the claim are fully established. It probably is true that the medical profession is very gullible and proves to be an easy mark for advertising sharks. This may be excused perhaps when it comes to dollars and cents, but when dealing with precious lives or the comfort of humans the profession should proceed very cautiously until the merits of any remedial agent have been established upon a sound basis.

A. C. M.

ACUTE PANCREATITIS*

The biliary tract and the pancreas are so intimately connected in their embryology, anatomy and pathology, that it is useless to consider the one without due regard to the other. It is wise to bear in mind that definite pathology in the former may lead to serious results and a fatal termination in the latter, in the form of acute pancreatitis, if allowed to go too long before an operation for its removal is performed. Cases of acute pancreatitis are not common, but how many surgeons and physicians—without exceptional experience—can correctly diagnose a case in time to offer the patient a fair risk by operation?

Diseases of the pancreas were for a long time little understood, until the intensive study of the biliary tract by the surgeons showed how closely they are related. It is now generally conceded that the lymphatics play a prominent rôle in bringing about this condition. The mortality is exceptionally high in cases of acute pancreatitis without operation within the first twenty-four hours, and higher still if allowed to go beyond that limit, even making the diagnosis next to impossible after that time. The sudden, sharp, agonizing pain, cyanosis of the lips, rapid pulse, vomiting, severe shock, cold, clammy skin, epigastric pain radiating to the back on the left side, hurried respirations and shallow breathing, rigidity of the upper abdomen, distention not usually relieved by enema, and pain not relieved except with enormous doses of morphin, due to the fact that the semilunar ganglia are embraced in the exudate or that there is an inflammation of the ganglia—this is the picture of acute pancreatitis.

Familiarity with the anatomy of the pancreas and biliary tract helps one to appreciate the symptoms and their significance, and aids in the diagnosis. What to do, when to do it, after you have made the diagnosis, are all questions that will be answered in the General Session of the Reading Meeting in October in the Symposium on Acute Pancreatitis. T. G. S.

HEMORRHAGES OF PREGNANCY*

Improved delivery technique and prenatal care have materially reduced infantile mortality. Still further reduction can and must be made by a careful study of the hemorrhages of pregnancy, some of which are frank hemorrhages occurring in the latter part of pregnancy, usually indicating a low implantation of the placenta, but a normally implanted placenta frequently separates sufficiently to cause grave danger to the infant, as well as jeopardizing the maternal life.

In the past, traumatism has been suspected as being the most frequent etiological factor, but careful scrutiny of these cases would seem to prove that retroplacental hemorrhage is but a local manifestation of a general toxic condition, frequently the first, and at times the only suggestion of danger. It forms the basis of both an interesting and practical study. The relative frequency and seriousness of slight bleeding, or, at times absence of all symptoms excepting uterine pain, is usually suggestive of this condition. Many of these cases can undoubtedly be prevented. The existing case should be recognized early and appropriate treatment applied.

The correlation of toxemia with eye conditions should receive much more consideration than is usually given to it. It is always of value and frequently the first suggestive symptom. Uterine hemorrhages as a whole have not received the consideration they should from the profession, and it is with this in mind that a symposium on this subject has been arranged for the Reading Meeting in October. H. A. M.

THE SEQUELS OF GONORRHEA AND THEIR SIGNIFICANCE IN SURGERY

During the past year a series of lectures on syphilis and gonorrhea, in various sections, have for the most part been of unusual merit. It is peculiar, the slow progress which has been made in the knowledge of gonorrhea, although this disease was well known long before the time of Hippocrates. Not until the specific organism was discovered by Neisser in 1879, was it understood that this infection may become general, and that the gonococcus may be found in every organ and in every body cavity and may even lead to death. The sequels of gonorrhea may be divided into three classes: the local infections in the neighborhood of the urethra, such as periurethral abscesses, strictures, etc.; the ascending processes affecting the oviducts and ovaries, or the prostate and testicles, the bladder, ureters and kidneys; the blood infections, which give rise to severe acute gonococcus pyemia, or the less severe forms affecting the heart, the pleura and the joints.

The gonorrheal joint affections are numerous and important. To indicate the frequency and severity of these affections, one author mentions that during a period of five years, 18 cases of severe gonorrheal infection of the hip came under his notice. One died from a coexisting double pyelitis, 6 were discharged entirely cured, and in all the others there was more or less limitation of motion, four having permanent shortening. These very severe cases of joint and kidney affections are not usually recognized as they are easily mistaken for tuberculous processes.

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*Editor's Note: The Scientific Program Committee of the Medical Society of the State of Pennsylvania has promised to furnish the Journal each month with a short editorial written by the section officers, with a view to creating interest in the subjects that will be considered at the Reading meeting, the first week in October, 1924.

The fact that so many severe cases of gonorrheal hip disease occurred in the practice of one trustworthy observer makes it evident how important is this form of infection. Probably no infectious disease is much more common or may be followed by more serious results. Yet the gravity of gonorrheal infection is still overlooked and underrated by most practitioners. This must be to some extent the result of neglecting to keep thoroughly posted as to the results of careful investigations since the discovery of the gonococcus. F. C. H.

A "SESQUI" NATIONAL MEDICAL CONGRESS IN '26

Why should not the medical profession of Pennsylvania start a movement to hold in Philadelphia an assembly of American physicians to put on record advances taken since 1876 in dealing with medical, surgical and hygienic problems? It is unnecessary for such active organizations as the Medical Society of the State of Pennsylvania, and its constituent county societies, to wait until the business men of Philadelphia, its lawyers, railroad men, preachers and other citizens wake up to the opportunity which is offered to show the country what has been accomplished in the last fifty years.

Are we not proud of the important step taken in medical journalism about forty years ago, when Dr. John H. Packard of Philadelphia proposed that the medical profession start its own journal? Think of the American Medical Association Journal of to-day and the special journals connected with it published in Chicago! Call to mind also the numerous state medical journals resulting from the proposition of Dr. Cyrus Lee Stevens of Bradford County, that in Pennsylvania a journal owned by the State Society be started. Can one forget the successful campaign launched by Koenig of Allegheny County, and Cohen of Philadelphia, against journalistic acceptance of advertisements of secret nostrum venders? Is it not important to remember the stir and final success of the movement obtained by Pepper, to prolong to three years and improve the medical curriculum?

Did not the effort of McCormick, of Lycoming County, Foster of Allegheny County, Gable of York County, Weidman of Berks County lead to the successful passage of the first bill, in which the state took control of a state medical examination and the licensing of medical practitioners?

The creation of a State Board of Health pushed to success by the papers read in the State Society by Benjamin Lee, of Philadelphia County, was the antecedent of the remarkable Department of Health, which made Pennsylvania a model for all other states. Dixon and Martin of Philadelphia County, Miner of Lehigh County, and others brought renown to Pennsylvania health matters in this Department of state activities.

The handling of the tuberculosis scourge, even before the discovery of Koch, was well started under the leadership of Flick. Who was it that laid before the eyes of the world the necessity for efficient dealing with typhoid fever epidemics, particularly in military camps, but Shakespear, a member of the Medical Society of the State of Pennsylvania? It was in the Pennsylvania medical profession that the early operations for appendicitis and for the prevention of perforative peritonitis in typhoid fever were systematized as valuable adjuvants to medical and surgical practice.

Never will be forgotten the laboratory investigations of the therapeutic agents for dealing with syphilis by Schamberg, Raiziss and Kolmer.

Hiram Corson of Montgomery County, with the aid of Trail Green of Northampton County, was the early and succcessful advocate of the admission of medical women to the State Medical Society and the county medical societies. The memory of these two men should not be lost by medical women.

The improvement of medical colleges and the creating of new institutions in Pittsburgh and Philadelphia, and the attention paid by the State Medical Society to clinical teachings in the rural and suburban hospitals, have done much to give rise to valuable postgraduate and graduate teaching in the great specialties of medicine and surgery.

Surely these important events in the medical history of Pennsylvania deserve to be reported in detail at a national medical gathering. Can one fail to believe that other states of the Union have similar productive events to report in commemoration of their own masterful progress in medicine?

If Pennsylvania physicians are asked whether the Centennial Exposition of 1876, a half century ago, was worth while, they may well reply that of all the many benefits derived by the people of the United States from that memorial gathering, none was greater than that coming from the visit to Philadelphia's Medical Congress of Joseph Lister, the Quaker scientist, surgeon and investigator, of Scotland. His teaching of antiseptic surgery at that time almost rivals in its effect on mankind the journey of Paul of Tarsus in response to the call from Macedonia.

Lister's demonstrations of his method of combating surgical fever, pyemia and septic deaths caused Keen, Mears, Nancrede, Levis, Morton and others to accept the Listerian gospel of good tidings, which has revolutionized the medicine and surgery of the whole world.

Let the Medical Society of the State of Pennsylvania now resolve that there shall be issued an invitation to all the states of the Union to bring to Philadelphia in 1926 tales of the wonders wrought in their regions as a result of Lister's instruction given in 1876 at the Medical Congress in the Quaker City. J. B. R.

VERBUM SAT SAPIENTI

"If, having found an adequate reason for a patient's illness, we have been able to combat or to remove the cause, and if the patient does not then recover, it will follow (1) either that there is another important cause in action which we have overlooked, or (2) that the action of the first cause has been for so long a time in operation that its *effects* cannot be undone. What is too commonly the practice of the doctor in rush circumstances, is to order one pharmaceutical remedy after another in the hope that one may relieve."

Thomas H. Fenton, M.D.

PIONEER PHYSICIANS OF PENNSYLVANIA

MERCER COUNTY

Mercer County has the honor of being named for a distinguished physician and soldier, Hugh Mercer. Dr. Mercer was a Scotchman, born in Aberdeen in the year 1721. He had a fine professional education. He served as Assistant Surgeon in 1746 at the battle of Culloden between the Highlanders and the Royalists under the Duke of Cumberland. In the above-named battle he was among the forces led by Charles Edward, the Pretender, and due to their defeat, he became a refugee and sought asylum in America.

Dr. Hugh Mercer was the first physician in Franklin County, Pennsylvania. In 1755, after Braddock's defeat, the Indians made attacks on the settlers in the Cumberland Valley. Dr. Mercer was made captain of a company of settlers to protect themselves against the forays of the Indians. In 1757 he was promoted to the rank of Major in the forces of the Province of Pennsylvania for taking part in the Indian campaigns. In 1758 he became acquainted with General George Washington when on the expedition of General John Forbes against Fort Duquesne. General Washington and Dr. Mercer became great friends. This expedition being successful Major Mercer was promoted to the rank of Colonel and left in command of the captured Fort Duquesne.

Colonel Mercer was induced by Washington to take up his residence in Fredericksburg, Virginia, between the dates of 1763 and 1775. At the beginning of the Revolutionary War, he was commissioned a Colonel in a Virginia regiment and was soon made a Brigadier General on the recommendation of General Washington. He was with Washington when he crossed the Delaware on Christmas Eve, 1776. On January 3, 1777, while leading the vanguard of the Americans at the battle of Princeton, his horse was shot under him and he continued the contest on foot. British officers surrounded him and ordered him to surrender. Dr. Mercer drew his sword and began an unequal contest. He at last was beaten to the ground with muskets and his body lay pierced with bayonet thrusts. He was left on the field for dead, his body having five wounds and his head two. His comrades carried him into a house near by. Washington, hearing of his friend's condition, sent his nephew, Major Lewis, to watch over the dying hero. Thus ended the life of a distinguished physician and warrior; and Mercer County bears his name. It recalls the lines of Grey's Elegy, written in a country churchyard.

"The boast of heraldry, the pomp of power,
And all that beauty, all that wealth e'er gave,
Await alike the inevitable hour.
The paths of glory lead but to the grave."

In the foregoing lines you will see that the physicians of Mercer County never failed the summons of war of their country.

Mercer County was settled about 1800. History records a few settlers in the Shenango Valley as early as 1794. The charter was granted in 1805. It is hard to realize the condition of the county at that time, with no roads but those worn by the wild beasts and Indians, then following one of those paths to find a stream and no bridge, in contrast to our present-day civilization with paved roads, railroads, automobiles, telephones, telegraph systems and many other improvements too numerous to mention. The hardships of our pioneers in medicine are indescribable, riding horseback over unbeaten paths and through tangled forests for a half hundred miles with only the compass for their guide. They had to carry all drugs and dressings, as a drug store was unheard of in the county.

Dr. John Mitcheltree located in the Shenango Valley, near Wheatland (a suburb of Sharon), in 1807. He practiced throughout this vicinity for a number of years, and died in 1852, having accumulated a large estate, but leaving no children to inherit it.

Dr. Flowers located in Sharon soon after Dr. Mitcheltree. Dr. J. M. Irvine, who came to Sharon at a later date, was a brother of Dr. Mitcheltree's wife.

Epaphroditus Cossitt, a doctor of much note, located in Mercer in 1808. He was a student at Yale when his father moved to Trumbull County, Ohio, in the spring of 1805, from Connecticut. Later in this same year Dr. Cossitt began the practice of medicine in Warren, Ohio, fourteen miles from Sharon, Pennsylvania. He was a famous surgeon and no doubt practiced in Mercer County before moving to Mercer. When the War of 1812 began Dr. Cossitt went to Erie as Captain of the Mercer troops. He was later made Surgeon-General in Harrison's Army. After the close of the war he returned to Mercer, where he practiced until he went West. His brother, Dr. James S. Cossitt, also practiced in Mercer with him.

Their younger brother, Dr. Henry De La Cossitt, was a well-known pioneer physician of Mercer County, born in Grandby, Connecticut, May 3, 1803, and died March 1, 1877, at his home in Salem Township. He spent his boyhood days in Trumbull County, Ohio. When about twenty years of age, he began to read medicine with his two older brothers in Mercer. He afterwards attended his first course of lectures at the Physicians' and Surgeons' College, Fairfield, Herkimer County, New York, in 1824-25. In the year 1825 he began to practice medicine in Greenville, where he practiced for half a century. His name was known all over the country as a most successful practitioner of medicine. He took several young doctors into partnership with him and helped them start on their careers. In 1835 he took Dr. R. E. Breiner into partnership, which lasted until 1842; then he took Dr. D. B. Packard as a partner until the fall of 1857. Dr. Packard graduated at the Willoughby Institute of Medicine. Dr. Fielding Donaldson was his next partner. Dr. Donaldson graduated at the University of Pennsylvania in 1869, and their professional careers lasted until two years later. Dr. Cossitt practiced alone until 1874, when he took Dr. B. E. Mossman, who received his degree at the University of Pennsylvania in 1879. They practiced together until Dr. Cossitt's death.

Dr. Mossman is still practicing in Greenville and is one of the oldest physicians of Mercer County. Two of his sons are also practicing medicine.

Dr. Cossitt had a strong personality. He was a highly respected citizen as well as a splendid physician. It is said that "he wore out a vigorous body in the performance of his duties." He traveled day or night up and down the roads around Greenville and was greatly beloved by many, many people. Three of his sons followed in their father's profession, Drs. F. S. Cossitt, D. S. Cossitt, and Henry De La Cossitt. They were all graduated from Western Reserve Medical School, Cleveland, Ohio.

Dr. J. M. Irvine, whose professional career was overshadowed by his generosity and activity as a citizen of Sharon, was born in Mt. Vernon, Ohio, October 13, 1813, and died in Sharon, April 29, 1878. He began the practice of medicine in Sharon about 1837, after graduating from Cincinnati Medical College, and practiced until the close of the Civil War. He retired from practice on account of failing health and became interested in coal mining. Dr. Irvine was a highly successful physician and was one of the founders and builders of Sharon. One of Sharon's principal streets bears his name. He was a prohibitionist and a leader of local option measures.

Dr. James Magoffin, Jr., practiced in Mercer for over half a century, locating there about July, 1821. He had a very large practice and died about 1879, aged 82 years. It is claimed that no physician in this part of the country practiced over more territory than he did. He was called into all the surrounding counties, thus making long rides on horseback. His father, Dr. James Magoffin, Sr., who had practiced medicine in Ireland, was in active practice for a time in Mercer and died in 1840. Dr. Berish, a brother of Dr. James, Jr., practiced medicine for some time in Mercer after 1840. Dr. James, Jr.'s son, Montrose M., graduated from the University of Pennsylvania in 1862 and practiced medicine in Mercer until his death. Dr. Montrose M. Magoffin has a son, Dr. Montrose M., practicing in Mercer, thus completing the fourth generation of physicians.

Christopher Heydrick, who was a prominent early physician, was born near Philadelphia in 1770 and graduated from the University of Pennsylvania in 1792. He was one of the physicians to the Philadelphia Hospital and was a member of the Medical Societies of Philadelphia. Dr. Heydrick practiced in Philadelphia until 1820, when he moved to Mercer and spent the remainder of his life in this county. He died in his 86th year on a farm in the Valley of French Creek.

Samuel Axtell located in Sheakleyville in 1825 and practiced there until 1852. His son, Dr. W. H. Axtell, was associated with him for several years, beginning to practice in 1840. John L. Axtell, a son of W. H. Axtell, graduated at Western Reserve Medical School in 1883 and located in Sheakleyville in 1884. Three generations of Axtell physicians practiced in the same office.

According to records, Dr. Thomas Coffey located in Mercer about 1820 and was postmaster at Mercer. Dr. E. W. Glezen came to Mercer about 1830 and Dr. M. K. Johnston in 1833. Dr. John Baskin came to Mercer about 1844 and died in 1851 from the effects of a runaway. His son, George W., practiced in Mercer and was assassinated in 1853. Dr. S. S. Mehard, who graduated at Jefferson Medical College in 1847, was one of the early physicians of Mercer. J. W. Mehard, his son, followed in the same profession. He was a graduate of Jefferson Medical College, class of 1871. The father died in the year 1853.

Dr. C. M. Stewart practiced medicine in Mercer about 1845, and Dr. B. F. Gordon in the year 1848. Dr. G. W. Yeager graduated at the University of Pennsylvania April 3, 1852, and located in Mercer. His son is practicing medicine in Mercer.

Records also show that some of Greenville's early physicians were Dr. Hardscrabble, who located there about 1819. Dr. Lane came about 1822, Obadiah Hall about 1824, Henry De La Cossitt 1825, Samuel Wylie 1826, and R. G. Stephenson 1847. Dr. E. X. Giebner graduated at Harvard University March 2, 1853, and located at Sandy Lake.

Dr. John McElrath was born in Ireland in 1813. He graduated from an academy and Western Reserve Medical School, Cleveland, Ohio. In the fall of 1852 he located at Jackson Center. He established a fine reputation as a practitioner and a citizen. In the winter of 1867-68, after being in practice for fifteen years, he took a postgraduate course at Jefferson Medical College. He died five years afterwards. Some of his friends said of him, "In the sick room, as in every relation of his profession, Dr. McElrath was a calm and thorough physician but possessed that cheerfulness which inspired encouragement, hope, and strength in his patients, with the Christian gentleness which could appraise them of approaching death without causing them excitement or dread. In the exercise of the latter office the true physician is as truly a minister of the gospel as though he had formerly assumed the duties of the clergy." He had a son, Dr. J. B., born in 1843, who died in 1904, after practicing in his father's office for thirty-two years. He was a graduate of Jefferson Medical College, class of 1871.

One of West Middlesex's earliest physicians was William Gates Henderson. He was a graduate of the University of Pennsylvania. He died in 1852.

Physicians located in Mercer County shortly after the charter of the county was granted. They were men well educated, the best that could be had in their generation, men who left their good influence behind when they passed on to their eternal reward. They were public spirited and ready to help the young doctor get a start.

Fortunately for Mercer County, what is true of the medical men in the pioneer days is true to-day. Several of our physicians have been the burgesses of their respective towns, several have served as postmasters, one served five years in the House of Representatives at Harrisburg, many have served as councilmen, school directors and directors of national banks. They have answered the call of their country from the beginning.

Dr. Epaphroditus Cossitt was captain of the Mercer troops in the War of 1812, and later Surgeon-General.

In the Civil War, Dr. John Barber, of Sharon, was an assistant surgeon. Dr. Elisha Griswold, of Sharon, was a major. Dr. John Paxton Hosack, of Mercer, was colonel of the Fifty-first Pennsylvania Volunteers. Dr. Robert Stranahan, of Mercer, was a surgeon. Dr. A. T. Clark and Dr. W. C. E. Martin were surgeons from Greenville, who served their country, also Dr. I. C. Feathers, of Sandy Lake; Dr. S. W. Johnston and Dr. W. H. Shaner, of Sharpsville, and Dr. John Massena, of Jamestown, all served as surgeons. There may have been others whose names were not found by the writer.

In the Spanish-American War, Dr. Salem Heilman, of Sharon, was a major. He was the chief surgeon of the National Guards of Pennsylvania, being the physician highest in rank. He was stationed at Fort Sheridan during the war. He built a hospital in thirty days with a capacity of one hundred and sixty beds, which was occupied by typhoid fever patients. He treated many typhoid cases and did not lose a patient. Major Heilman was graduated from Jefferson Medical College in 1871, and has practiced in Sharon ever since. He took postgraduate work in Vienna some years ago. He was one of the organizers of the Protected Home Circle Order in 1886 and has been the Supreme Medical Director for this order since its origin. Dr. Heilman has practiced for fifty-three years and has been very successful and enjoys a host of friends. His only son is practicing with his father.

Dr. John M. Martin, deceased, of Grove City, was a First Lieutenant in the National Guards and went out with his company during the war. He was a warm friend of Major Heilman's. Dr. Martin graduated from Bellevue Hospital Medical College, New York City, in 1874, and died in 1923. He served five terms as a state legislator with a remarkable record, always being fair. He could not be tempted. He was a very successful physician, and drove for miles over the surrounding country to consult with his fellow physicians. He was always generous to the poor and always kind to the younger members of the profession.

Just to mention our present physicians, more than thirty answered the call in the World War, others doing these physicians' work in their absence.

According to history, physicians were active in organizing the Lodge of the Free Masons. One of the organizers of Mercer Lodge was Dr. Epaphroditus Cossitt, of Sharon Lodge, Dr. J. M. Irvine, and of the Greenville Lodge, Dr. John T. Ray.

In 1843 the physicians of Mercer County felt the need of an organization to further scientific work, so they organized the Mercer County Medical Society, with Dr. Samuel Axtell as its president, and Dr. T. L. Harper, secretary.

Several men in our present Medical Society have served their county nearly half a century or more. Dr. Robert M. Hope, of Mercer, has practiced ever since he was graduated from the Cincinnati College of Physicians and Surgeons in 1874, and Dr. Joseph H. Reed, of Sharon, since his graduation at Miami Medical College, Cincinnati, Ohio, in 1878. They are both fine men and have done a tremendous amount of good for humanity, and needless to say have hosts of friends. Dr. Hope has a son practicing medicine.

Dr. B. E. Mossman and Dr. Salem Heilman have been mentioned in this article.

Dr. John H. Twitmyer, of Sharpsville, had practiced since his graduation at the University of Pennsylvania in 1872 until his death last September. He was a fine Christian gentleman and a skilled physician, loved by all who knew him. His work for humanity will not be forgotten and he was always most kind to his associates.

There have been many physicians, that have served their county well, whose names are not mentioned here, but in this article it was the aim to search for the early physicians, those who bore the hardships of the pioneer days.

EDITH MACBRIDE, M.D.

203 Dollar Title and Trust Building, Sharon, Pa.

Dr. O. Pine queries: What is the matter with those sickly European revolutions? Why don't they hire a good doctor—a Doctor Jean Paul Marat, for example?

Dr. O. Pine queries: If you decry competition and desire to lessen it materially, why not locate opposite the largest cemetery you can find?

Dr. O. Pine queries: How many of our wonderful scientific discoveries of to-day will be relegated to the scrap heap of to-morrow?

Dr. O. Pine queries: Is the nurse anesthetist a relic of or a reversion to surgical atavism? Or while one hand caresses her, does the other lovingly fondle the wallet?

Dr. O. Pine queries: The public often wonders what a hospital does with all the money it gets, but has it ever reflected how much cheaper one can rent a nice room in a hospital than an equally comfortable one in a hotel?

Dr. O. Pine queries: How easy to laugh at a Lourdes abroad, but how difficult to crack a smile at a Davenport at home? But, cheer up, Iowa! May not the "Father of Waters," as in the past, manipulate its course and transfer territory from one state to another?

Dr. O. Pine queries: Did you ever notice how quickly the average public health official suspends that "eternal devotion to the health of the people, which shall ever be my foremost aim," when his job has run down? Some tongues are like clocks—make a noise like perpetual motion only for a limited time, when they must be rewound to produce continuous effect.

At a meeting in Witsville, one of the numerous politicos, aspiring to occupy swivel chairs or to play golf, while directing various county and municipal departments, neglected to employ that classic platitude, "I believe that the average man is honest." The chairman, noticing that he was about to conclude, pulled him gently by the coat tail and whispered that he had omitted this very important political salvo. The orator replied sotto-voce, "I know it, but what can I do? I have been dodging collectors of physicians' accounts in this place for years."—*O. Pine.*

Dr. O. Pine queries: What easier method of obtaining public sympathy and recognition than to espouse a cult, violate a public health statute, hire an anti-vaccinationist pettifogger, appear before a "second Daniel" whose eyes are attended to by an optometrist, and trust your vindication (sic) to the wisdom of twelve of your Christian Scientist, osteopathic, chiropractic, or fortune-telling-minded peers, who are all opposed to that "octopus," the "medical trust," except when an emergency suggesting death, drives one or more of them cowardly into one or more of the powerful fingers of that hated giant?

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg.
Pittsburgh, Pa.

VALUE OF WRITTEN RECORDS

Recent experiences of the Committee of Council, in the conduct of the defense of members of our society in suits for alleged malpractice, have served to emphasize the imperative need for the maintenance of adequate records by practicing physicians in the treatment of their patients. The failure to keep such records in two of our recent cases proved so costly that the attorney for the defense was requested to give in writing his views based on many years' experience in the defense of suits for alleged malpractice. From his observations and recommendations we quote the following:

It is becoming increasingly important that physicians keep accurate records of appointments made and treatment given.

The reputation gained by a lifetime of conscientious service may be swept away in an hour by one's inability to furnish satisfactory proof of the technique followed in a single treatment.

Without written records the jury may choose only between the recollection of the disappointed patient and the recollection of the attending physician as to the technique followed during a certain treatment.

Records should be kept in permanent form. The integrity of lead pencil memoranda is always open to challenge.

A merchant takes time to make accurate and specific entries in his books that he may prove his right to the money or goods to which the entries relate. The loss of money or goods is not to be compared with the loss of reputation which may be inflicted upon the physician unable to support by his records, his claim that he was diligent in his attention to his patient.

The keeping or breaking of an appointment may be the pivotal point around which a medicolegal case may turn. Record broken appointments—how, when and by whom broken.

For your patient's welfare use care—abundant care; for your own protection use care; and let your well-kept records furnish the written evidence of that care.

AFFILIATE MEMBERSHIP

The addition of Section 9 to Chapter 4 of the Constitution, providing for Affiliate Membership, was designed to make it possible for certain more or less inactive members to continue their connection with their county, state and national medical societies without suffrage, without officeholding responsibilities and without payment of annual dues. A careful study of the following, which has been recommended to a component county medical society as an amendment providing for Affiliate Membership, will indicate that Affiliate Membership is not advisable for physicians remaining actively in practice. Such study will also bring out the fact that a request for Affiliate Membership must meet certain requirements and be approved by the member's county medical society before formal request is made to the State Society. The Constitution of the State Society states that an eligible member "may, on request of his component medical society, be made an Affiliate Member."

Inasmuch as the continuation of the State Journal to an Affiliate Member will cost the State Society approximately $3.00 per year, the State Society naturally is interested in knowing that only worthy members receive the advantages of Affiliate Membership.

Suggested Amendment to Provide for Affiliate Membership in a Component County Medical Society

A member of this society who is not less than sixty-five years of age and who has been a member in good standing of a component county society of the Medical Society of the State of Pennsylvania for a continuous term of fifteen years, shall, upon his own written request, approved by action of this society, become an Affiliate Member.

Affiliate members shall not be required to pay annual dues. They shall be privileged to participate in the scientific discussions of the society, but they shall not be allowed to vote or hold office. They shall receive the Journal of the Medical Society of the State of Pennsylvania. Affiliate members shall be entitled to the benefits of the Medical Benevolence Fund of the State Society, but shall not be entitled to any benefits from its Medical Defense Fund.

THE FEBRUARY BOARD MEETING

The February meeting of the Board of Trustees was held at the permanent quarters of the Society, 230 State Street, Harrisburg, the first Tuesday of February. Reports were received from officers, councilors, and chairmen of the three standing committees of the Board.

The Chairman of the Medical Legislative Conference of Pennsylvania, Doctor George A. Knowles, was present. He urged the various councilors to action among their county societies on the instruction of legislative candidates in the virtues of the legislative program to be fathered by the Conference; namely, the One Board Medical Act, the amendment to the Workmen's Compensation Act, defense of medical research and preventive medicine. He finally stressed the importance of having every physician in Pennsylvania not only registered to vote but actually voting in the spring primaries.

Secretary Van Sickle of the Public Relations Committee reported the result of the meeting held by said committee the previous evening. The committee had decided to continue the diphtheria prevention campaign, to father a bill to be introduced at the 1925 Legislature to provide for the segregation and instruction of backward and mentally defective children in the public schools of the state and to recommend to the State Department of Health the issuance of cards to physicians reporting births; said cards to urge the immunization with toxin-antitoxin, of all infants at the age of six months.

The Board decided to recommend to the various component county societies the advisability of discussing at a meeting of each society during the next six months, the subject of mental hygiene, and decided to accept the offer from the Mental Hygiene Department of the Public Charities Association of Pennsylvania, 419 South Fifteenth Street, Philadelphia, Pa., to furnish to the various county societies speakers to address them on the most important phases of mental hygiene.

An informal suggestion was made by a member of the Board that the members before the regular May meeting consider the advisability of recommending an increase of one dollar in the annual per capita assessment, anticipating that the added income would be applied to the Benevolence Fund and to payment of expense in connection with the holding of our annual sessions.

The Board adjourned to meet in Harrisburg, May 6, 1924.

CANDIDATES FOR THE 1924 HONOR ROLL

On February 18, 1924, this office had received the annual assessment of 3,404 members; on the same day, 1923, of 3,027 members; on the same day, 1922, of 2,258 members; on the same day 1921, of 2,300 members.

The percentage of 1924 dues received at this office, February 18th, from certain county medical societies is herewith indicated: Wyoming—100%; Juniata—100%; Perry—100%; Montour—100%; Clinton—96%; Clarion—93%; Adams—91%; Greene—86%; Center—84%; Mifflin—84%; Union—84%; Bradford—81%; Delaware—80%; McKean—77%; Columbia—72%; Montgomery—70% Armstrong—67%; Blair—66%; Wayne—65%; Lycoming—64%; Dauphin—62%; Northumberland—61%; Huntingdon—59%; Clarion—58%; Washington—58%; Luzerne—57%; Mercer—53%; Cambria—52%; Allegheny—51%; Potter—51%; Elk—50%; Fayette—50%; Philadelphia—50%.

Members of the various component county medical societies who have not already paid their 1924 dues are reminded of the fact that unless their dues are paid in time to be remitted to this office March 31st, they will for all time be deprived of medical defense protection in suits that may be brought alleging malpractice occurring between December 31, 1923, and the date of the payment of their delinquent 1924 dues. Attorneys' fees amounting to $650.00 have been paid from our Medical Defense Fund since January 1st, at the conclusion of the conduct of three suits in which our members were defendants.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to February 18th:

ALLEGHENY: *New Members*—Ambrose T. Kibzey, 604 Chartiers Ave., Pittsburgh; Henry C. Carlson, 316 Eighth St., Braddock. *Reinstated Member*—Abraham Shapira, 4767 Liberty Ave., Pittsburgh. *Resignation*—John A. Lichty, Clifton Springs, N. Y., formerly of

Pittsburgh. *Deaths*—George E. Bair (Western Reserve Medical College, '84) from nephritis, Jan. 26, aged 61; Roscoe T. Kline (Univ. of Pittsburgh, '17) from pneumonia, Dec. 12, aged 33; Moore S. McKennan (Univ. of Pittsburgh, '92), Jan. 21, aged 57; William K. T. Sahm (Jeff. Med. Coll., '77) from heart disease Jan. 25, aged 74.

Beaver: *Reinstated Member*—Caroline M. Baldwin, Rochester.

Blair: *Reinstated Members*—Carey C. Bradin, Samuel L. Stonebreaker, Tyrone.

Bradford: *New Member*—William R. Campbell, E. Smithfield.

Clarion: *New Member*—William C. Stewart, Parkers Landing.

Clearfield: *New Members*—Herman C. Hughes, McEwen Bldg., Du Bois; Creston L. Owens, Coalport. *Transfers*—Samuel Stalberg of Cleveland to Ohio State Society; Dennis E. Szabo of Boardman from Allegheny County Society.

Dauphin: *New Members*—Thomas V. Murto, 109 W. Emaus St., Middletown; Ralph E. Pilgrim, 3400 Derry St., Harrisburg. *Transfer*—Ora F. McKittrick, of Linglestown, from Washington County Society.

Delaware: *New Members*—John E. Barsby, Cambridge Trust Bldg., Marcus Hook; Charles E. Feddeman, 717 Kerlin St., Mollie A. Geiss, 320 Jeffrey St., Chester.

Erie: *New Member*—J. W. Switzer, Wesleyville. *Reinstated Member*—A. Louis Smith, Corry.

Fayette: *New Members*—R. J. Billings, Uniontown; George B. Marshall, Perryopolis; Howard S. Reiter, Brownsville. *Death*—Russell T. Gribble of Fairchance (Univ. of New York, '86) from angina pectoris, Dec. 31, aged 63.

Huntingdon; *New Members*—Edmund L. Jones, 514 Penn St., Huntingdon; Harrison J. McGhee, Aitch.

Lancaster: *Death*—Harry A. Mowery of Marietta (Coll. of Phys. & Surg., Baltimore, '88) Feb. 11.

Luzerne: *New Members*—Albert G. Gibbs, Nanticoke; John L. Lavin, Ashley; Howard A. Lichtenwalner, Sweet Valley. *Reinstated Member*—Thomas H. Mays, 612 Main St., Freeland.

McKean: *New Member*—Sophronous A. McCutcheon, Bradford.

Montour: *Removal*—Charles B. Mayberry from Retreat to 225 Lansdowne Ave., Wayne.

Montgomery: *Transfers*—Raymond F. Campbell of Norristown from Philadelphia County Society; J. K. Williams Wood of Willow Grove from Philadelphia County Society; John B. Price, of Norristown from Lancaster County Society.

Northampton: *New Members*—Joseph S. Cohen, 914 Northampton St., Edwin R. Lewis, Easton Hospital, Easton; William B. Smith, Bangor; Raymond C. Bull, Lehigh University, Bethlehem.

Perry: *New Members*—J. E. Book, Newport; George W. Gault, Marysville.

Philadelphia: *New Members*—J. Bernard Bernstine, 630 Spruce St., Bowman C. Crowell, The Gladstone, 11th and Pine Sts., Edward S. Dillon, 2040 Pine St., W. Forest Dutton, 1818 Lombard St., John Harvey, 36th and Powellton Ave., Joseph Levit, 703 N. 5th St., Philadelphia. *Reinstated Member*—Jacob Schoening, 1908 N. Park Ave., Philadelphia. *Removal*—Penn G. Skillern of Philadelphia to South Bend, Ind. *Resignations*—E. Stanley Abbott, Boston, Mass.; Merle S. Boyer, C. T. Cutting, Macomb K. Elmer, Richard H. Harte, S. Cooke Ingraham, Dudley W. Lane, John T. Walker, Philadelphia; Samuel W. Hamilton, New York City; Douglas P. Murphy, Rutherford, N. C. *Death*—Empson H. Bainbridge of Philadelphia (Univ. of Penna., '01).

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since January 17th. Figures in first column indicate county society numbers; second column, State Society numbers.

1923				
Jan. 19	Luzerne	242	7342	$5.00
Feb. 7	Erie	136	7343	5.00
1924				
Jan. 18	Somerset	11–17	953–959	35.00
	Juniata	11	960	5.00
	Clinton	13–14	961–962	10.00
	Allegheny	268–383	963–1078	580.00
Jan. 19	Clearfield	1–26	1079–1104	130.00
	Montgomery	77–90	1105–1118	70.00
	Mercer	4–9	1119–1124	30.00
	Perry	1–5	1125–1129	25.00
	Somerset	18–19	1130–1131	10.00
Jan. 21	Dauphin	1–66	1132–1197	330.00
	Venango	5–15	1198–1208	55.00
	Mercer	10–15	1209–1214	30.00
	Delaware	51–55	1215–1219	25.00
	Cumberland	13–15	1220–1222	15.00
Jan. 22	Juniata	12	1223	5.00
	Montour	13–17	1224–1228	25.00
	Venango	16, 19–20	1229–1231	15.00
	Northumberland	8–29	1232–1253	110.00
	Bradford	25, 27	1254–1255	10.00
	Berks	1–60	1256–1315	300.00
	Mercer	16–17	1316–1317	10.00
	Union	9	1318	5.00
Jan. 23	McKean	1–23	1319–1341	115.00
	Huntingdon	14–21	1342–1349	40.00
	Franklin	1–18	1350–1367	90.00
	Mercer	18–19	1368–1369	10.00
Jan. 24	Luzerne	1–60	1370–1429	300.00
	Juniata	13	1430	5.00
Jan. 25	Luzerne	61–122	1431–1492	310.00
	Mercer	20–21	1493–1494	10.00
	Montour	18	1495	5.00
	Bradford	28–31	1496–1499	20.00
Jan. 29	Union	10	1500	5.00
	Lehigh	7, 8, 10–24	1501–1517	85.00
	Clinton	20	1518	5.00
	Mifflin	8–16	1519–1527	45.00
	Blair	28–58	1528–1558	155.00
	Mercer	22	1559	5.00
	Clinton	15–18	1560–1563	20.00
	Erie	9–22	1564–1577	70.00
	Venango	17	1578	5.00
	Mercer	23	1579	5.00
Jan. 30	Somerset	20	1580	5.00
	Perry	6-8–13	1581–1587	35.00
	Franklin	19–20	1588–1589	10.00
Jan. 31	Center	11–21	1590–1600	55.00
Feb. 4	Mercer	24–30	1601–1607	35.00
	Center	22	1608	5.00
	Butler	6, 14, 15	1609–1611	15.00
	Westmoreland	1–44	1612–1655	220.00
	Northampton	1–51	1656–1706	255.00
	Bradford	32–33	1707–1708	10.00
	Union	11–12	1709–1710	10.00
Feb. 5	Clarion	19–21	1711–1713	15.00
	Delaware	56–60, 62	1714–1719	30.00
	Potter	1–4	1720–1723	20.00
	Beaver	1–30	1724–1753	150.00
Feb. 6	Somerset	21	1754	5.00
	Erie	23–28	1755–1760	30.00
Feb. 7	Union	13	1761	5.00
	Armstrong	16–38	1762–1784	115.00
	Cambria	32–53	1785–1806	110.00
	Clarion	22–30	1807–1815	45.00
	Clinton	19, 21–23	1816–1819	20.00
	Mercer	31–32	1820–1821	10.00
	Erie	29–43	1822–1836	75.00
	Philadelphia	1–1000	1837–2836	5,000.00
Feb. 8	McKean	24–31	2837–2844	40.00
	Luzerne	123–139	2845–2861	85.00

Feb. 8	Mifflin	17–21	2862–2866	$25.00
	Lancaster	1–38	2867–2904	190.00
Feb. 11	Northampton	52–56	2905–2909	25.00
	Montgomery	91–106	2910–2925	80.00
	Franklin	21–22	2926–2927	10.00
	Northumberland	30–37	2928–2935	40.00
	Venango	18	2936	5.00
	Montour	19–20	2937–2938	10.00
Feb. 13	Dauphin	67–98	2939–2970	160.00
	Wayne	15–17	2971–2973	15.00
	Franklin	23–25	2974–2976	15.00
	Clinton	24	2977	5.00
Feb. 14	Mercer	33–35	2978-2980	15.00
	Cambria	54–74	2981–3001	105.00
	Westmoreland	45–64	3002–3021	100.00
	Somerset	22	3022	5.00
	Potter	5–8	3023–3026	20.00
	Lycoming	59–62		
		64–73	3027–3040	70.00
	Allegheny	384–635	3041–3292	1,260.00
Feb. 16	Greene	1–22	3293–3314	110.00
	Bradford	26, 34–39	3315–3321	35.00
	Bradford	43	3322	5.00
	Fayette	2–60	3323–3381	295.00
	Delaware	63–67	3382–3386	25.00
	Butler	16–20	3387–3391	25.00
	Montour	21–22	3392–3393	10.00
	Greene	23	3394	5.00

FREDERICK L. VAN SICKLE, M.D.

Executive Secretary

230 State St., Harrisburg, Pa.

WORK THAT MUST BE DONE THIS YEAR

At first, the subject we had in mind was "What we *must* do this year." Some of our members may object to the "must" just as the old adage says, "You may lead a horse to water but you cannot make him drink." Many do not like to be compelled to do things. However that may be, there are certain steps that must be taken during this year if we are to succeed in accomplishing the objects we have set out to accomplish next year. Certain moves on the chess board must be taken in order that the moves of next year may win us the game. What are these moves?

We must first establish most friendly relations with the members of the House of Representatives and State Senate who are to serve in the next year's session of the Legislature. We have never exerted ourselves to the limit that we should in order to have a reasonable number of friends in the Legislature, who will pass the measures we favor or reject by vote those we have reasons for objecting to.

Next year we want the Medical Practice Act amended, or a new act passed in its place, so that all persons who desire to practice any form of the healing art must have the proper amount of preliminary and premedical education in order to obtain entrance to the final examinations for licensure; so that a reasonable amount of education must be obtained in anatomy, physiology, chemistry, diagnosis, etc.; so that the practitioner may have the knowledge necessary to know what is the matter with the individual about to be treated. There should be no favoritism shown to any one who desires to practice the healing art for gain and there should be none allowed by law.

When it comes to the application of therapy, every branch should be examined by representatives of that special form of practice. This we hope to accomplish next year by the passage of a bill so drawn as to play no favoritism with any one. Other states have such a law—why not Pennsylvania?

We have for two sessions of the Legislature tried to obtain proper interpretation of the Workmen's Compensation Law so that the practitioners of medicine as well as the hospitals and the employees may receive the proper compensation due them. This has been refused, and the Commission appointed at the last session of our State Society is at work preparing such a measure as shall be just to all parties concerned.

After much effort, many conferences and the development of a "plan of procedure" to prosecute those who practice the healing art illegally, it was found that the medical profession as an organization cannot so prosecute those who are to-day practicing in violation of the various laws relating to examination and licensure. The time has arrived when we must get behind the various boards of examination and licensure (we should have but one board) and endeavor to pass an act for the investigation and prosecution of all those who are practicing illegally. Sufficient friends and machinery must be created by law so that Pennsylvania may be cleaned up as regards all forms of irregular and illegal practice.

A committee of the State Society is now studying the subject of nonmedical technicians and their education, and we doubt not that a bill will be developed and introduced by them next year to regulate the practice of the nonmedical technician.

There will be many measures suggested by the Department of Health that will be offered to us for our consideration and it is hoped that a very close relationship may be established between the Department and organized medicine so that each may help the other in the passage of just laws for the benefit of the people of this Commonwealth.

Quite a group of subjects appear each session which we find it good policy to advocate, and with "friends at court" we can aid in the passage of the bills proposed.

We have reason to fear a revival of agitation in favor of compulsory health insurance in this state. This may be only "talk," but we must not forget that the people back of the original plans for such practice have not ceased in their endeavors. Then, too, those who advocate the repeal of laws for the enforcement of compulsory vaccination are still active. Also those who would prevent animal experimentation would like to pass a law to be known as the antivivisection act.

There are many queer, often impossible bills introduced that it is necessary to oppose, and these must be considered as they appear. Suffice it to say that the Medical Legislative Conference still exists and has been and will be a very active and potent factor in this legislative program.

You say, "This sounds all right and *should* be accomplished," but you ask what part you are to play in this scheme. Will you see the candidates to House and Senate of your district, and make them the friends of organized medicine in so far as is consistent with justice, truth and fair dealing? The great mass of the people of this state know nothing of the danger of the various vicious measures that have been defeated every two years. But were these measures to have been passed and become laws, the people then would have reproached every medical doctor in the state for their lack of attention to what would be considered their duty.

It is possible that you may sidestep this effort, but in so doing you will make it impossible for your representatives, the Medical Legislative Conference, and this office, to accomplish the objects you will look to us to achieve. You will get out of the effort, time and money expended, results exactly in proportion to what you put into it. The medical profession has only begun to appreciate the advantage of organized effort, and let us this year be fully awake and active.

CHICAGO SESSION OF THE A. M. A.

Announcement by Committee on Hotels

The Committee on Hotels of the Local Committee of Arrangements has arranged with the Hotel Men's Association in Chicago for the provision of satisfactory accommodations for all who expect to attend the Seventy-Fifth Annual Session of the American Medical Association, June 9th-13th. This committee has the active coöperation of the Bureau of Conventions of the Chicago Association of Commerce. Members of the Association who expect to attend the session should write direct to the hotels of their choice for reservations. If the preferred hotel is unable to provide accommodations as desired, the request will be turned over to the Committee on Hotels of the Local Committee of Arrangements, and accommodotions at another hotel will be secured. Duplicate reservations should not be made. In the initial request for reservations, the date of arrival in Chicago, as well as the length of time the applicant expects to remain and the number and kind of rooms desired, should be clearly stated. It is also desirable that second and third choice of hotels be stated. The Committee on Hotels will make every effort to secure accommodations in keeping with expressions of preference. Dr. Frank R. Morton is chairman of the Committee on Hotels of the Local Committee of Arrangements. If satisfactory arrangements for hotel reservations cannot be made through communications addressed directly to hotels, the Committee on Hotels may be addressed at the office of the Local Committee of Arrangements, Room 1522, 25 East Washington Street, Chicago.

A complete list of Chicago's leading hotels and rates to be charged will appear in *The Journal* in the near future.—*Jour. A. M. A.*, Feb. 2, 1924.

NOTICE

CALL FOR VOLUNTEER PAPERS READING SESSION

The Committee on Scientific Work, at its first meeting at Harrisburg, February 5, 1924, instructed that a call be issued for eleven volunteer papers for the Reading Session of the Medical Society of the State of Pennsylvania, October 6 to 9, 1924.

(1) The subject and a brief outline of all papers must be furnished the Committee before April 21, 1924.

(2) The time limit for the reading of each paper is ten minutes.

(3) An author wishing stereopticon or projectoscope for the illustration of his paper must ask for same when submitting title and outline of paper.

(4) Titles of papers are to be sent direct to section officers or the Chairman of the Committee on Scientific Work.

(5) The Committee reserves the right to decline any paper not deemed of sufficient merit for the sessions.

Thomas G. Simonton, M.D., *Chairman,*
5321 Fifth Ave., Pittsburgh, Pa.

Dr. O. Pine queries: Would it not be advisable to assemble representatives of convention exhibits beforehand, in order to remind at least a few that if they exhibited a fair amount of ardor in contact with some modest medicos who are interested in their paraphernalia, they would not have to complain so bitterly of nonvisitation by medical convention visitors? Some exhibitors' representatives are sparkling mixers, but as for some others, why not place them in cold storage?

COUNTY MEDICAL SOCIETIES

REPORTERS OF COUNTY SOCIETIES

Adams—James P. Dalbey, M.D., Gettysburg.
Allegheny—Lester Hollander, M.D., Pittsburgh.
Armstrong—Jay B. F. Wyant, M.D., Kittanning.
Beaver—Francis H. McCaskey, M.D., Rochester.
Bedford—N. A. Timmons, M.D., Bedford.
Berks—Clara Shetter-Keiser, M.D., Reading.
Blair—James S. Taylor, M.D., Altoona.
Bradford—Stanley D. Conklin, M.D., Sayre.
Bucks—Anthony F. Myers, M.D., Blooming Glen.
Butler—L. Leo Doane, M.D., Butler.
Cambria—Joseph J. Meyer, M.D., Johnstown.
Carbon—Jacob A. Trexler, M.D., Lehighton.
Center—James L. Seihert, M.D., Bellefonte.
Chester—Henry Pleasants, Jr., M.D., West Chester.
Clarion—H. A. Wick, M.D., New Bethlehem.
Clearfield—W. E. Reiley, M.D., Clearfield.
Clinton—Clair B. Kirk, M.D., Mill Hall.
Columbia—C. B. Yost, M.D., Bloomsburg.
Crawford—Cornelius C. Laffer, M.D., Meadville.
Cumberland—Calvin R. Rickenbaugh, M.D., Carlisle.
Dauphin—W. Minster Kunkel, M.D., Harrisburg.
Delaware—George L. Armitage, M.D., Chester.
Elk—Joseph E. Madara, M.D., St. Marys.
Erie—Anna M. Schrade, M.D., Erie.
Fayette—Hugh Ralston, M.D., Uniontown.
Franklin—Samuel D. Shull, M.D., Chambersburg.
Greene—Thomas B. Hill, M D., Waynesburg.
Huntingdon—John M. Keicbline, Jr., M.D., Huntingdon.
Indiana—H. Boydston Smith, M.D., Blairsville.
Jefferson—W. A. Hill, M.D., Reynoldsville.
Juniata—W. H. Banks, M.D., Mifflintown.
Lackawanna—G. A. Clark, M.D., Scranton.
Lancaster—J. Sullivan, M.D., Lancaster.
Lawrence—William A. Womer, M.D., New Castle.
Lebanon—W. Horace Means. M.D., Lebanon.
Lehigh—Harold E. Hersb, M.D., Allentown.
Luzerne—H Irvin Evans, M.D., Ashley.
Lycoming—Wesley F. Kunkle, M.D., Williamsport.
McKean—Francis DeCaria, M.D., Bradford.
Mercer—M. Edith MacBride, M.D., Sharon.
Mifflin—F. A. Rupp, M D., Lewistown.
Monroe—Charles S. Flagler, M.D., Stroudsburg.
Montgomery—John C. Simpson, M.D., Norristown.
Montour—John H. Sandel, M.D , Danville.
Northampton—Wm. A. Finady, M.D., Bethlehem.
Northumberland—Charles H. Swenk, M.D., Sunbury.
Perry—A. R. Johnson, M.D., New Bloomfield.
Philadelphia—Franklin M. Crispin, Philadelphia.
Potter—Ross H. Jones, M.D., Coudersport.
Schuylkill—Arthur B. Fleming, M.D., Tamaqua.
Snyder—John O. Wagner, M.D., Beaver Springs.
Somerset—H. Clay McKinley, M.D., Meyersdale.
Sullivan—P. G. Biddle. M.D., Dushore.
Susquehanna—Robert B. Mackey, M.D., Montrose.
Tioga—H. A. Vosburg, M D., Arnot.
Union—Oliver W. H. Glover, M.D., Laurelton.
Venango—John F. Davis, M.D., Oil City.
Warren—M. V. Ball, M.D., Warren.
Washington—Charles C. Cracraft, M.D., Claysville.
Wayne—Hugh Stevenson, III, M.D., Honesdale.
Westmoreland—D. Allison Walker, M.D., South West.
Wyoming—Herbert L. McKown, M.D., Tunkhannock.
York—Maurice C. Wentz, M.D., York.

March, 1924

COUNTY SOCIETY REPORTS

ALLEGHENY—JANUARY

The regular scientific meeting of the Allegheny County Medical Society was held on Tuesday, January 15, 1924, 8:35 P. M., at 43 Fernando Street, Pittsburgh, Pa. Attendance: 242.

Dr. J. W. Boyce read the following report of the Necrology Committee:

On the evening of December 28, 1923, Dr. James Matheny Barr died at his residence on Kenwood Avenue, N. S., Pittsburgh, Pa. He was born forty years ago in Valencia, and graduated in 1908 from the Medical School of the University of Pittsburgh. After that he was a resident in the Passavant Hospital, then began his general practice in Weirton, W. Va. Developing tuberculosis, Dr. Barr entered the Cresson Sanitarium, where he was able to do a physician's work. Later he was on the Staff of the Tuberculosis League's Hospital in Pittsburgh. Quite recently he has been examiner for the United States Veterans' Bureau in Pittsburgh. The disease which had attacked him soon after his graduation was really the cause of his death. Dr. Barr was a member of the Masonic Fraternity, and also of the United Presbyterian Church. He is survived by his widow, his parents, and two sisters.

Saturday morning January 12, 1924, Dr. Roscoe Textor Kline, after a few days illness with pneumonia, died at his home in Pittsburgh, Pa. Dr. Kline was born in 1891, and was graduated in 1917 from the School of Medicine of the University of Pittsburgh. After faithful service as interne in the Allegheny General Hospital he began practicing in the Perrysville Avenue district. Lately he has been making a specialty of pediatrics, working in the out-patient department of the Children's Hospital. Dr. Kline was a Mason and also a member of the Watson Memorial Presbyterian Church, where funeral services were held on Sunday afternoon. On Monday the body was taken to the home of his parents and surviving sister in Evans City, Pa., and the interment took place. He leaves a wife and two little daughters.

Dr. Frederick Ambrose Davies, who was born in Pittsburgh and graduated in medicine at the Chicago Homeopathic Medical College in 1894, died of lobar pneumonia at 7:45 Sunday morning January 13, 1924, at the West Penn Hospital. Dr. Davies leaves a wife and two little daughters. Mrs. Davies is at present ill of pneumonia in the West Penn Hospital.

Dr. F. A. D. Gillis's paper, entitled, "The Mechanical Effects of the Obstetrical Forceps," was discussed by Dr. H. F. Bauman, and Dr. Gillis in closing.

Dr. Fran. R. Bailey read a paper entitled, "An Analysis of 350 Cases of Goiter."

Dr. G. D. Dunmire, read a paper entitled, "Diagnostic and Prognostic Importance of Basal Metabolism in Toxic Goiter." Dr. Bailey's and Dr. Dunmire's papers were discussed jointly by Drs. Acheson Stewart, J. W. Boyce, J. P. Griffith, J. H. Barach, J. J. Rectenwald, R. J. Behan, and Bailey and Dunmire in closing.

Dr. Theodore Diller presented a paper entitled, "Irregular Practice of Medicine." The advent of the steam engine and increased multiplication of mechanical devices since that time have wrought vast changes in human society, so great and vast that some thinkers fear that human beings may be eventually crushed by their own civilization. In the same length of time and more especially in the last fifty years there have been rapid multiplication of chemical, physical and mechanical methods of investigation of diseases and treatment of them, so that to-day we are in a very complex situation in a world that is highly technical, where everything is specialized and everything being more specialized. This very mechanical advancement promotes credulity, which men without scruples seize upon so that with every advance of medicine there is a corresponding possibility of humbuggery foisted upon the public. There is the will to believe, which psychologists have of late much employed. This means simply that we believe what we wish to believe, and disbelieve what is unpleasant. And then when we consider how fundamental is emotion and how secondary is the intellectual part of the mind we can readily understand why irregular medicine and quackery exists. There is a close parallel between things financial and things medical which physicians will readily recognize. Perhaps there are few men in this room who have not at some time patronized a quack or semi-quack financier. Why? A quicker and shorter route to financial gain was held out than that which was recommended by the more conservative banks of the town. So unfortunately the sick man who is a notorious victim of credulity turns to the quack and his promise of a cure. Hence quackery thrives.

The human world may be divided into the concrete and abstract, the material and the spiritual, the seen and the unseen. In medicine in times past little has been made of the unseen, the psychic side of man. Regular practice may be divided into two branches, one dealing with the concrete, the other dealing with the abstract. Those who deal with the concrete say there is always a cause for disease and if this cause can be found then the thing to do is to remove it. This done, all is well. So the regular physician who tells a patient that the case of disease is a genetic or biologic or embryologic defect talks in vague language. The chiropractor says no such thing, but he tells him he suffers from a dislocation of bone and that he can remove this and the patient will get well—and many, many do get well, for in the language of Mr. Dooley, the chiropractor can cure many people of disease they have not got. But he supplies a psychological need and a concrete cause is given for the disease and a remedy for the removal of the same. Spondylotherapy and osteopathy, of course, can be understood in the same way.

Then for another type of mind there is the one who fears to see the realities of life, and disease is ignored. It is said to be nonexistent. So Christian Science, New Thought, and other cults of this sort thrive. This can be well understood by the type of mind of the individual who will not go to insane asylums or prisons. There are a great many people belonging to this class. Our democracy, I believe, promotes quackery. Under our laws the right of one to follow any religion is recognized and I believe this makes Mr. Legislator vote for any fake medical thing that he may give the right to choose in medicine as he does in religion to his constituents. Also Mr. Legislator is always a strong supporter for the under dog in the fight.

What can we do about it? In the first place we can make up our minds as philosophers that since there always has been irregular practice in the world, and there is as much credulity as ever, there will always be irregular practice of medicine. Moreover I believe that medical men and medical societies should not be required to act as policemen and put quackery and irregular medicine out. Let the arm of the law do this or let it go undone. Let us not be put in the position of desiring to foster our own trade union. With this said I must express my approval of the main things which have been done and are being done by the profession as represented by the very able Journal of the American Medical Association in exposing various fakes and remedies. It is most valuable and I heartily commend it; also the principle which is being fought for that all who apply for license to practice the healing art of any sort should be required to submit to a general examination and show that they are in possession of an adequate general education.

This paper was discussed by Dr. Walter F. Donaldson, and Dr. Diller in closing.

Adjournment 10:50 P. M.

Lester Hollander, Reporter.

CLINTON—JANUARY

The Clinton County Medical Society held their annual meeting at 6:00 P. M., January 25th, at the Fallon House in Lock Haven. The following officers were elected to serve during 1924: President, G. D. Green, Lock Haven, Pa.; Vice-President, George Tibbins, Beech Creek, Pa.; Secy. and Treas., R. B. Watson, Lock Haven, Pa.; Recording Secy., Clair B. Kirk, Mill Hall, Pa.; Delegate to the House of Delegates of the Medical Society of the State of Penna., Dr. Wm. Shoemaker, with Drs. I. B. Critchfield and D. W. Thomas as alternates; Censors, Drs. C. B. Kirk, D. W. Thomas and A. B. Painter; Legislative Committee, I. B. Critchfield and D. W. Thomas; District Censor, C. L. Fullmer of Renovo, Pa.; Committee on Cancer, I. B. Critchfield and Wm. E. Welliver; Committee on Roster for 1924, C. B. Kirk, I. B. Critchfield and D. W. Thomas.

The retiring president, Dr. Wm. I. Shoemaker, entertained the Society with an elegant dinner which was appreciated by about thirty members of the Society.

The members from Renovo were prevented from being present owing to the lateness of the railroad train. Dr. A. T. Decker of Williamsport and Dr. Perry A. Bay of Jersey Shore were also present.

A very interesting and instructive talk on the Senses and Why They Are so Often Affected was given by Dr. Decker and illustrated by lantern slides. Dr. Shoemaker, the retiring president, gave an interesting address and complimented the society on its achievements during the last year.

Dr. Harshberger, having removed to Lawrence County, was given a transfer card to their society.

R. B. Watson, Secretary.

DAUPHIN—FEBRUARY

Dr. E. L. Eliason, Associate Professor of Surgery, Medical Department of the University of Pennsylvania, spoke before the Dauphin County Medical Society, February 5, 1924, on "Supracondylar Fractures of the Humerus," illustrated with slides of twenty consecutive cases. A summary of his talk follows:

There has been a tendency to avoid open treatment of fractures of this kind in recent years. At the University of Pennsylvania Hospital all fractures are handled as emergencies and set as soon as possible after diagnosis. The presence of edema is not considered, *per se*, an indication for delay. All of them are re-aligned under direct observation through the fluoroscope. This necessarily demands close coöperation with the x-ray department. The anatomical and functional results, and the time-saving factor, however, have amply justified this procedure. The cases reported have included a large per cent previously manipulated from two to five times, as well as recent injuries. The danger to the operator of repeated and prolonged exposure has been avoided by rotating team work, the use of two thicknesses of rubber gloves, and by intermittent exposure between the necessary manipulations. The tendency to rotation of the lower fragments has been overcome by immobilizing the arm in a plaster swath, at right angles to the lateral body plane in front of the chest, with the forearm flexed ninety degrees or more. In several cases, a bridge of bone has been observed to unite the humerus and forearm, and in one particular case, *mirabile dictu,* to disappear spontaneously. The cause of its formation has been ascribed to the stripping of the periosteum and subsequent calcification of the underlying hematoma.

This relatively new method of handling fractures of this kind, and the excellent results obtained, impressed the society members as a distinct advance over the older methods, and needless to say, the evening was profitably enjoyed by all.

W. M. KUNKEL, Reporter.

ERIE—FEBRUARY

The Erie County Medical Society met February 5th, and was addressed by Dr. Arthur G. Davis, one of our own members, on the subject, "Is There Any Evidence to Suggest That Faulty Body Mechanics Bear Any Causal Relation to Poor Health?"

Dr. Davis spoke in part as follows: It is difficult for the rank and file of our profession to adopt, as a factor, the mechanical viewpoint in the etiology of ill health. To the orthopedic surgeon the mechanical factor looms large. Body mechanics may be interpreted in various lights. One may translate the known facts in reference to the group, e. g., to the slumping school-child, as part of a national health program, or as an antidote to modern sedentary life in the adult, and as such it becomes a factor in preventive medicine.

Or, one may use the tangible evidence in relation to the individual problem, because as such it becomes a factor in the reconstructive therapeutics of the chronic patient and certain acute conditions.

Physical anthropometry has established the fact that humanity divides itself in spite of race, color or geography into three constant classes: (a) the slender—carniverous or hyperontomorphs; (b) the medium—intermediates, meso-ontomorphs, the so-called normals; (c) the heavy—hypo-ontomorphs.

These types have been proved by Hrdlcka, De Giovanni, Lombroso, Waugh, Lane, Keith, Dwight, Cannon, Bean, Bryant, Swaim, and a list of others, to have certain characteristics in their statural indices and various other indices and mensurations. Gastro-enterologists have observed certain constants of morphology of stomach and bowel. The insurance companies have arrived at a fairly reasonable gauge of longevity by relations of heights, weights, ancestry, chest expansion and general conformation as to slender or compact. Such medical sayings as "Fair, fat and forty for the gall-bladder," "The lean horse for the long race," "The drooping slender asthenic," "The fat diabetic," are all significant of congenital anatomic, metabolic types and inherent disease potentials. The exact observations along these lines have brought out two outstanding pictures:

(a) the tall, slender, so-called asthenic man, woman or child; (b) the short compact type.

The first has long extremities, short torso, relatively long narrow chest with acute subcostal angle and ribs inclining downward, small bones, tall vertebræ of narrow width, frequently 6 lumbar vertebræ, shallow interiliac notch, greater joint range, long necks, small hearts, lower vascular tension, fish-hook stomach placed far to the left, the liver small, low and vertical and far to the right, the colon long, low hepatic flexure, usually high splenic flexure, transverse colon low hanging, with frequently a mobile ascending colon, i. e., the ascending colon has a definite mesentery instead of retroperitoneal position. The ileum is relatively short. The disease potential here is constipation, atrophic arthritis, tuberculosis, visceroptosis, asthenia and the neuroses, with several other less conclusively proven tendencies.

The second type, the short compact individuals with decided tendency to corpulency, is characterized by relatively long torso, short extremities, large barrel chest with flaring subcostal angle, the ribs extending nearly horizontally, heavy bone and ligamentous 'structure, broad vertebræ, large transverse processes, with occasionally only four true lumbar vertebræ or a deep interiliac notch, less joint range, short necks, large hearts, high vascular tension; the type of cor bovinum. In this type the stomach is nearer the midline and usually entirely above the umbilicus, the liver, large with the caudal lobe well to the left, the colon relatively short with high hepatic flexure and the transverse portion above the umbilicus, ileum relatively long. The disease potential here is rather of the opposite type. Constipation is less frequent, visceroptosis relatively rare, tuberculosis infrequent, constitutionally phlegmatic, but not asthenic, not neurotic, materialistic rather than imaginative, tending toward cardiorenal disease, gall-bladder condition, diabetes and hypertrophic arthritis. This contrast of types can be carried into many other fields.

The long distance runner, the all around athlete, the fancy dancer, the laborer selected for endurance work, are all slender. The full back, wrestler, heavy-weight lifter and broad backed heavy-work laborer are all selected from the stocky type.

The anatomical differences characteristic of sex are generally quite well appreciated, the special points worth stressing being the effects wrought by wearing of artificial supports and repeated pregnancies in the female, with resulting atrophy of abdominal musculature and the great difference in the structure of the sacroiliac joint.

Much has been written on the evolution of the human pelvis involving changes incident to the assumption of the erect position. It of course goes without saying that the erect human attitude carries certain penalties. That many human organisms would function more ideally and present greater mechanical efficiency with the torso in the horizontal plane is quite generally accepted. The spine would certainly be less likely to scoliosis, there would be less likelihood of stoop-shoulders, hunch-back, lordosis, and other degrees of slumped posture through the action of gravitation. By the same law it is easy to see the difficulty of propelling waste along such a perpendicular tube as the ascending colon and the obliquely ascending transverse colon. It is difficult to conceive why the splenic flexure is placed in one of the highest parts of the abdomen. Waugh points out that dilated cæca in subjects presenting a congenital free mesentery to the ascending colon are entirely due to mechanical inefficiency. Difficult as it is for the peristaltic wave to propel material uphill through a fixed tube, this difficulty is increased markedly if this tube hangs in loose folds.

ANNA M. SCHRADE, M.D., Reporter.

LEHIGH—FEBRUARY

The February meeting of the Lehigh County Medical Society was held in the nurses' home of the Sacred Heart Hospital, Allentown, Pa., on Tuesday, the 12th, 1924. Dr. Thomas H. Weaber, the president, called the meeting to order at 8:30 p. m. The attendance was very good, and the nurses of the Hospital were well represented.

Owing to the fact that the speaker of the evening had to catch a train, the business was held over until after the program.

The president introduced Dr. T. Turner Thomas, of Philadelphia, to the Society, who spoke on the subject of "Common Fractures; Diagnosis and Treatment." One of the main points brought out by Dr. Thomas was the fact that the displacement was caused not so much by muscle pull, as is often thought, but by the fracturing force. He dwelt for some time on this thought, mentioning several fractures of the upper extremity, with their corresponding dislocations, stating that all displacement of fragments or dislocations was usually in the same direction and always due to the force causing the fracture.

The treatment is in all cases to determine the position at once by x-ray; then, according to the position, to study the force and reduce the fracture, reversing the direction of fracturing force, and after reduction immobilizing the part.

After his talk, Dr. Thomas illustrated several cases by x-ray negatives, showing excellent results obtained by his method.

Business was then taken up. The minutes of the last meeting were read and approved. Several bills were ordered paid. There was quite a discussion regarding the status of the physician under the Workmen's Compensation Act. This question was left in the hands of the Public Policy Committee. After the reports of several committees, adjournment followed.

Harold E. Hersh, M.D., Reporter.

LUZERNE—FEBRUARY

The regular meeting of the Society was held in the Society Building on February 6, 1924, and was called to order by Vice-President Wolfe at 8:35 P. M.

Dr. Prevost read resolutions on the death of Dr. S. L. Underwood. Dr. Stewart read resolutions on the death of Dr. W. Clive Smith. It was moved and seconded that the resolutions be adopted. Carried.

Dr. Trapold, Jr., reported for the Program Committee that the following would read papers:

February 20th, Dr. Dattner on "The Pirquet System of Nutrition."

March 5th, Drs. W. J. Davis, Dougherty and Doyle would present a "Heart Symposium."

March 19th, Drs. Mayock, Dailey and Trapold, Sr., would present a "Kidney Symposium."

Dr. Lewis H. Taylor reported for the Library Committee and presented to the Society a picture of Dr. Isaac Edgar Ross who died in 1901.

Dr. Gibby read a letter from the Commission on Compensation Law, which requested our Society to take some action to suggest changes in the Compensation Law, which would make this law more equitable and sound. The Secretary also read a letter from this commission urging that immediate action of this kind be taken by our Society. A Committee was appointed consisting of Drs. Meyers, S. P. Mengel and J. J. McHugh to coöperate with the Commission on the Compensation Law.

The Secretary read applications for membership from the following physicians: Dr. Robert A. Gaughan, Hazleton, Pa.; Dr. George W. Taggart, Hazleton, Pa.; Dr. John J. Dailey, McAdoo, Pa.; Dr. William H. Jones, Hazleton, Pa.; Dr. William V. Coyle, Hazleton, Pa.; Dr. B. C. Rumbel, Conyngham, Pa.; Dr. Frank Venerosa, Hazleton, Pa.; Dr. Charles S. Holman, West Hazleton, Pa.; Dr. John W. Leckie, Hazleton, Pa.; Dr. Luther S. Luppold, White Haven, Pa. The Secretary also read application for transfer of Dr. Jessie Janjigian from the Montgomery County Medical Society and Dr. Alexander Armstrong from the Carbon County Medical Society.

Dr. Albert H. Gabriel read a very instructive paper entitled "Lumbar Pain." This paper was discussed by Drs. Mundy, Gibby, Meyers, and Schappert, and the discussion was closed by Dr. Gabriel.

Dr. H. Irvin Evans, Reporter.

LYCOMING—FEBRUARY

The monthly meeting of the Lycoming County Medical Society was held Friday, February 8, 1924, at the City Hall, Williamsport, with an attendance of fifty.

The meeting was featured by an address on "The Practice of Medicine in China," by Dr. Wu, who is in the United States taking some postgraduate work and is at present located at the Blossburg Hospital. Dr. Wu was graduated from the Union Medical College of Pekin, China, in 1917, after following a seven years' course. He came to the U. S. to learn the methods of the American hospitals and the American physicians. Though he has been in the United States only 8 months, he was able to convey his thoughts to the physicians in very good English.

He gave a brief account of the early history when herbs were used empirically in the treatment of disease, which in Chinese history dated back 5,000 years. He stated that there was a record of a noted man who diagnosed contagious disease about the time of Moses. There is still a strong following among the unscientific in the use of herbs, with no attempt at surgery. He related how the Chinese doctors are expected to relieve or cure a case of sickness with two doses of their herbs, and if not successful one doctor will be discharged and another employed, to be discharged and another employed until the case dies or recovers. He recalled a case of typhoid fever where twenty physicians were employed in rotation, and the last physician, who came on the case after it had run its course, received the honor and credit of curing the patient.

Scientific medicine was introduced by the medical missionaries. One of the oldest hospitals now existing has been in operation 70 years.

Dr. Wu, after graduation, was connected with a Methodist hospital having 20 beds and averaging 40 dispensary cases each day. Many maternity cases were treated in the hospitals. This is because the herb doctors will not give any attention to such cases.

Dr. Wu told of some interesting personal experiences in the treatment of cases in their homes, in one instance traveling 60 miles. Another time he walked 6 miles and found a case of an arm presentation, but had to return to the hospital for instruments. The patient recovered. In another case he was greeted with an explosion of fire crackers, thus expressing their way of honoring him. In this case he delivered the mother of girl twins, much to the chagrin of the father, who already had more daughters than he wanted.

The same diseases that occur in the United States are found in China. The bubonic and other plagues are more common. Dr. Wu emphasized the fact that many of the hospitals do not have the desirable equipment and that the remuneration is usually small, but that scientific medicine is gaining a strong foothold and a physician is very much respected.

Dr. Frank E. Rouse described the favorable results in a case of severe septic pneumonia associated with suppurative orchitis following a slight infection of a little finger.

Dr. J. P. Hawley reported a case of left inguinal hernia of massive size, which contained bowel, omentum and the bladder. The patient was a man of 50 years of age. The final recovery was very good. The case was also complicated with diabetes and nephritis, therefore requiring some preparation for the operation, which was performed under nitrous oxid and oxygen. He encountered a marked return of the diabetic symptoms, leading into coma four days after the operation, but responding very promptly to insulin which was continued for 8 days, after which all symptoms of diabetes disappeared.

Dr. F. R. Adams reported a case of pneumonia treated with pneumococcus antibodies, with prompt reaction and rapid recovery.

Dr. Clair Bastian reported a case of erysipelas of a severe type in a child under one year of age.

The Society endorsed the efforts of Dr. Chevalier Jackson to have laws enacted requiring proper labeling of lye preparations.

Resolutions of respect and regret were adopted on the death of three of our members: Dr. Ferdinand S. Nevling, of Clearfield, who died December 21st; Dr. Joseph L. Derr, of Salladasburg, who died December 25th; and Dr. Charles Schneider, of South Williamsport, who died January 24th.

At the January meeting the following officers were elected for the year: President, Albert F. Hardt; first vice-president, T. K. Wood; second vice-president, G. Alvin Poust; secretary, W. S. Brenholtz; treasurer, John A. Campbell; reporter, W. F. Kunkle; district censor, Edward Lyon; councilor, W. S. Brenholtz.

W. F. Kunkle, M.D., Reporter.

PHILADELPHIA

January 23, 1924

The President, Dr. F. Hurst Maier, in the Chair.

Symposium on Peptic Ulcer

Dr. John B. Deaver: Surgical Treatment.—Peptic ulcers, in their order of frequency, are duodenal, gastric, gastro-jejunal and jejunal. Their treatment includes the treatment of all foci of infection, for an infection is primarily responsible for the ulcer, except in cases of tuberculosis, lues and malignancy. The cause of peptic ulcer is that of any ulcer, and a toxemia may lead to ecchymosis, hemorrhagic infarct, slough and necrosis. That the appendix is frequently the original focus of infection in peptic ulcer is a view borne out by the work of Rosenau, which shows the elective localization of streptococci in certain types of cells. Absorption is through the lypmh glands at the base of the mucosa, from the blood stream, and not from the food mass, but the gastric juices cause a rapid necrosis, and by their acidity make healing of a gastric ulcer rare. A peptic ulcer has always had an acute beginning. Erosions often heal, leaving a slight cicatrix, but ulcers do not.

In operating on these cases, foci of infection must be borne in mind, and any abdominal foci treated at time of operation. Excision is made with cataract knife and cautery, and the usual operation is the posterior gastro-enterostomy. In a small or large ulcer on the posterior duodenal wall a posterior gastro-enterostomy alone may be used or it may follow amputation of the duodenum below the perforation. If the ulcer is low down, near the head of the pancreas at the duodeno-jejunal junction (which is a rare location), a posterior gastro-enterostomy alone is done. Small ulcers occur most frequently along the lesser curvature on the anterior or posterior wall not far from the pylorus, and these are excised and cauterized. The sleeve dissection is used in the hour-glass constriction. When the ulcer is large, with a wide area of induration, a subtotal gastrectomy is done, with closure of the proximal end and a gastro-enterostomy or an anastamosis of the jejunum to the gastric organ. The no loop operation is better than the one using the jejunal loop, for in the latter there is usually vicious vomiting unless a jejunostomy is used also. In ulcers of the cardia, which are rare, early excision is feasible; but late, complete removal of the stomach, a most formidable operation, is indicated.

The paper was closed by stereopticon slides showing the various kinds of ulcers and their operative treatment.

Dr. Martin E. Rehfuss: Medical Treatment.—Dr. Rehfuss agreed with Dr. Deaver in the bacteriologic etiology of peptic ulcer and would therefore carry out the treatment along bacteriological lines. With a great variety of poisons, focal infection can be produced in the stomach, causing degeneration, autodigestion and necrosis. A rational treatment must be sought—the surgeon aims at the effect, but the physician aims also at the cause. Ulcers of the duodenum are three times more frequent than gastric ulcers.

Moynihan has shown a distinct chemical difference between duodenal and gastric ulcer; in less than 30% of the latter is there high secretion in the stomach, while 72% of duodenal ulcers show a high terminal acidity.

Surgery cures 88% at operation, with 12% of cases with adhesions, possible slow leak, etc. The medical treatment aims to rearrange the gastric function, since the clinical ulcer tends to heal slowly, the acidity in the gastric juice maintaining the chronicity. The treatment consists in gastric rest, nerve sedation and neutralization of the gastric secretion. A patient symptomatically cured is not cured, for the fluoroscope and x-ray will still show an ulcer. Gastric ulcers will disappear in two to three weeks, while a duodenal ulcer is more tardy and has an average duration of 7½ years. The ambulatory treatment is therefore best, since it may be carried out over months or years. Two to three per cent of ulcers of the stomach undergo malignant degeneration, but malignancy is rare in the duodenum.

In the treatment, gastric rest must be secured. Food which is rapidly evacuated and which causes a low production of secretion (such as carbohydrates and a few proteins, especially boiled milk) must be used. Systemic alkalization frequently causes toxic symptoms, especially in renal cases; therefore locally acting substances, as calcium and magnesium phosphates (10-25 gm. per hour) are preferred. A diagnostic survey must first be made, and an x-ray. If the ulcer is indurated, fixed to adjacent viscera, larger than a nickel, with deformity of the stomach, it has passed the acute and medical stages and belongs to the surgeon. A small lesion, with the patient complaining of moderate indigestion, no enlargement of the stomach, no fixation to adjacent viscera, is medical, and safe while under close observation.

The treatment is divided into four periods: 1, starvation (as long as the patient can stand it or until the blood pressure drops or the pulse increases); 2, restricted feeding (parboiled or citrated milk every two hours with neutralization alternate hour—until occult blood is free, not longer than eight or ten days); 3, restricted feeding ii (cereals and starchy vegetables every 2½ hours); restricted feeding iii. At the end of three weeks the patient will usually show a gain in weight and will have no symptoms, but examination will show an ulcer and the ambulatory treatment must be carried on for months or years.

Dr. H. E. Radasch, of the Baugh Institute of Anatomy (by invitation): "The Distribution of the Acid Cells of the Stomach in Relation to the Formation of Ulcers." This paper was illustrated throughout by stereopticon slides showing the distribution of acid cells in the cardiac end of the stomach, extending 78-80% of the way from the cardia to the pylorus along the lesser curvature, slightly beyond the incisura, which is constant on the lesser curvature. There is a definite plane, vertical, or slightly forward or backward, from the lesser to the greater curvature, at which the acid cells end. Since there is so sudden a cessation of acid cells here it would seem plausible that this region should be especially susceptible to ulcer, just as the mucocutaneous junction is to malignancy.

In Discussion, Dr. Chas. F. Nassau doubted whether the shop girl and the workman can so change their lives as to follow the rules of medical treatment, and said he believes that many would prefer to take the chance of surgery. He granted to the medical man the "Rolls Royce" ulcers, but said that the surgeon must handle the "Fords." Careless surgery contributes to the fame of the medical men, and he questions how many ulcers, so-called, are not pylorospasm from a chronic appendix.

Dr. B. B. Vincent Lyon declared the meeting partisan, since Dr. Deaver sees the essentially surgical ulcer. He agrees with Dr. Rehfuss that there are medical ulcers. He has seen as many postoperative as nonsurgically treated ulcers, and has frequently seen marginal ulcers on a posterior gastro-enterostomy. Individualization of cases is essential in the treatment, both medical and surgical. The main factor is the etiology. He does not believe hydrochloric acid as common a factor as is given credence, therefore does not consider a cut in acidity as important as do some. The ideal of the excision of an ulcer is hard to practice.

Dr. Moses Behrend said that the surgeon gets the ulcer in the advanced stage. He believes that the treatment of Rehfuss, carried out by the general medical profession, does harm. He does not believe there are medical ulcers; if so, they always become surgical. He then showed slides to illustrate approach to the posterior wall through the gastrohepatic omentum, through the gastrocolic omentum, or through the transverse mesocolon.

Dr. Judson Daland stressed the importance of focal infection and stated his belief that unremoved foci constitute the chief cause for recurrences. Ethmoidal and sphenoidal sinuses are frequently overlooked. A deformed duodenal cap in conjunction with other clinical symptoms and signs is almost pathognomonic and may persist after the ulcer has healed, although the latency of ulcers must be borne in mind. He does not believe that ulcers are often caused by appendicitis, but rather that the appendicitis and ulcer have the same focus of infection.

Dr. Stewart believes in trying the medical treatment first if the patient will coöperate.

Dr. Lowenberg holds that some cases are distinctly medical, some surgical. If the ulcer is the result of an infectious process acting on the stomach wall, how can excision of one section guarantee nonformation of another ulcer? In surgically treated cases the patient is prepared by rest and the medical treatment is carried out as long, postoperatively, as medical treatment would have been carried out alone.

Dr. Stretmatter has never sent a case of peptic ulcer to the surgeon, and believes the cure of intestinal stasis (citing the frequency of obstruction at the ileocecal junction in these cases) essential. If the patient needs building up he gives calcium immediately after the taking of food, and to a plethoric individual he gives the citrate or bicarbonate of potassium, with tr. nux vomica, senna and podophyllum two to two and a half hours after meals, making a bowel movement three times a day routine.

Dr. Deaver replied with a record of 85% of cures and said that in recurrences not more than 3% were marginal ulcers. He claimed that the percentage of new ulcers from the original cause is very small and reasserted that most cases of ulcer have had appendicitis, and that the appendix is the most common source of infection in the belly cavity. Acidity and occult blood he disregards in the diagnosis of ulcer, sight and touch and x-ray being his surest guides. He believes the fractional test the only one of value. He holds medical men and gastro-enterologists responsible for the death certificates for carcinoma on ulcers. The cancer with history of indigestion for some years is based on an ulcer.

Dr. Rehfuss, in closing, stated that only 2-3% of gastric ulcers become malignant, while malignancy of the duodenum is very rare. In 100 treated cases none have perforated. He agrees with Dr. Deaver that gastric ulcer shows no characteristic change in the gastric analysis, but stated that duodenal ulcer does show a characteristic change. Mary A. Hipple, Reporter.

PHILADELPHIA

February 13th

SYMPOSIUM: Some of the More Modern Views in the Recognition and Treatment of Tuberculosis.

Dr. Robert G. Torrey: "The Value of the New City Tuberculosis Clinics and their Relation to the General Practitioner."—The Division of Tuberculosis was organized last summer by Dr. Blair Spencer after the recommendations of the Committee on Tuberculosis Prevention. The first dispensary system was organized fifteen years ago at 17th and Market Sts., with Drs. Stengel, Francine, Geo. Norris and Geo. Wood interested and working there. September 15, 1923, the Division took over the ten state dispensaries in Philadelphia, and while there are more or less the same physicians, nurses and patients as were in the state clinics, a difference lies in the fact that the City Bureau of Health is now used also. Under the state, treatment of the tuberculous individual was carried out, but while patients can now be listed for sanatoria, the work is wholly along the lines of tuberculosis prevention. The aim of the work is to secure the prompt reporting of cases, to provide for the home care of advanced cases or for hospital facilities where possible. The object is to assemble all the present utilities, augmenting the office and especially the nursing forces. Teaching along the lines of personal care, protection of contacts and sanitation of the home is done by the nurses, and a clinic visit is not necessary to secure their services.

The main factors in dealing with tuberculosis are infection and resistance, shorter hours, higher wages, better housing and education. Early cases are usually sent in by an industrial physician, or by a nurse because of a contact. The bureau of health and the hospitals must do the work, and while hospitalization is best, the amount of money required for a year's care of one patient will pay a nurse for supervision over 100 families for the same period. Early and accurate diagnosis is necessary to prevent spread of the disease, as well as to keep the family from public charity. Diagnosis should be made by symptoms rather than by physical signs, and a bacteriological examination of the sputum (made free of charge at the city and state laboratories, with sputum cups obtainable at every police station) is most important. There are about 20,000 cases of tuberculosis, with 19-2,400 deaths yearly in this city. Private physicians, hospitals and dispensaries must report the cases.

In outlining the program of the Department of Health. Dr. Cummings has stressed the prevention of transmission, especially by nursing instruction; diagnosis and treatment among the poor; the possibility of cases referred by the private physician for expert diagnosis; and the extension of the work to all sections of the city.

Dr. Elmer H. Funk: "Some Modern Concepts of the Diagnosis of Pulmonary Tuberculosis."—Tuberculosis differs from other diseases claiming special study in that the patients are drifting more and more to the general practitioner. Observation of the case is essential, since no instrument of precision, such as the electrocardiograph or duodenal tube, has been devised for its diagnosis. Time must be spent on each individual case, nor is there any reason for haste or finality in making the diagnosis. The history, symptoms, signs, x-ray and sputum all must be analyzed, as diagnosis cannot be made on any one alone, except the sputum if this is positive. All available positive evidence must be summed up. No uncanny ability is necessary in making the examination, simply a most *careful* inspection, palpation, percussion and auscultation. Limitation of expansion must be most closely observed, and auscultation, using forced expiration and cough before eliminating râles, is extremely important. It must be determined whether the lesion is active, quiescent or obsolete. If the apices are clear and there is involvement at the base it is probably not tuberculosis. Metastatic growths or lues may be frequently mistaken for tuberculosis if there is a failure to focus the attention outside the chest; and conversely, lung conditions may be seen only as hoarseness, dyspepsia or neurasthenia. Repeated examinations of properly collected sputum are necessary, with a check made on the positives. In an advanced lung condition with a negative sputum the diagnosis of tuberculosis should be challenged. The x-ray should be used merely as part of a chain of evidence, not as a diagnosis replacing a careful physical examination. Tuberculin may be useful in children. The fixation test is unsatisfactory, and a study of the vital capacity is too gross a test of respiratory function for differential diagnosis. Of twelve hundred cases admitted to beds for advanced tuberculosis at the Jefferson Hospital, 6% were found negative. Of 134 others autopsied, 5.2% were nontuberculous. Out of 551 necropsies made in Boston on cases of tuberculosis, 11% were without the disease.

Dr. Thomas Klein: "A Moving Picture Demonstration of the Physical Findings in Diseases of the Chest, By Reels Loaned by the War Department of the U. S."—Dr. Klein began by stressing the importance of a most careful history. The sputum in early cases is positive in only 15%; in moderately advanced, 45-55% ; and in far advanced cases, 75-85%. The x-ray (especially considering the cost to the patient) is used too extensively, and he condemns diagnosis by the fluoroscope. As to x-ray, stereoscopic plates only are reliable. He mentioned the class of "neurasthenics," with congenital or acquired visceroptosis, with old lesions at the apices, but whose symptoms are so frequently gastro-intestinal rather than pulmonary. He urged thoroughness and common sense in diagnosis. The films furnished an excellent demonstration of the proper methods of inspection, palpation, percussion and auscultation.

Discussion was opened by *Dr. E. J. G. Beardsley,* who mentioned the importance of weight in diagnosing these cases. After a careful history, and when all symptoms have been obtained, the most important thing is to "get the shirt off." Temperature is also a factor not to be disregarded. These patients deserve the very best of medical skill.

Dr. Harold Goldburgh urged a careful study of the child, segregating tuberculous parents and practising prophylaxis. Failure of a child to gain after the removal of all foci of infection is an indication for country care, with attendance at open air classes for a period after its return. An adult in the inactive stage may be free from symptoms, but not signs. The sputum may be negative.

Dr. McClain thinks a positive sputum not necessary for a diagnosis, and expressed a belief, from a study made on 220 children between the ages of six and twelve, that permanent results may be secured by close medical supervision for three weeks.

Dr. Lowenberg believes that basal tuberculosis is more common than Dr. Funk will grant, as indicated by the enlarged peribronchial glands (found so often in children) which drain the base of the lung. Tubercle bacilli, inspired, settle by gravity in the lower or middle lobe—before puberty, the apices are immune to tuberculosis. He thinks the fluoroscope, properly used, is a valuable aid in making a diagnosis.

The prevalence of the infection and its tendency to repair and innocuousness were mentioned, and the difficulty of differentiating acute respiratory diseases from healed tuberculosis was brought up.

Dr. Walter Cornell reported that out of 500 boys 14-16 years of age, thoroughly examined for tuberculosis, none was found.

Dr. Torrey, in closing, said that a sputum examination was the only means of differentiating postinfluenzal or postpneumonic conditions from tuberculosis.

Dr. Funk agreed that basal tuberculosis does occur in children, but considering the mass of clinical evidence, x-ray and necropsy findings he said that he believed a basal lesion with apices clear could be ascribed to something other than tuberculosis.

Dr. Klein noted the difficulty in classification, urging that the toxic element be the keynote, since a small lesion, in an individual susceptible to the toxin, may cause an advanced case, while another, with far advanced lesions, may be clinically well. It is impossible to make a prognosis before prolonged observation under proper conditions of rest, food and fresh air has been made. Mary A. Hipple, M.D., Reporter.

SOMERSET—JANUARY

The first meeting of the Somerset County Society for 1924 was held in the Court House at Somerset on the 15th of January, with a fairly good turnout of members, one-third of them being present. Officers who had been elected at a previous meeting were introduced into office for the year: Dr. H. A. Zimmerman, President; Dr. M. U. McIntyre, Vice-President; Dr. C. W. Frantz, Treasurer; and Dr. H. C. McKinley, Secretary.

Dr. Harry J. Cartin of Johnstown whom we are always glad to have with us, dropped in upon us and occupied the time of Dr. H. I. Marsden on the program and gave us a very interesting and instructive talk on insulin, the newest and best remedy yet discovered in the treatment of diabetes. Dr. Cartin pays special attention to diseases of children, and because of the many cases of diabetes in children, he was at home in his subject. He described the best method, time and condition in which to use the remedy, citing several cases and the favorable results of treatment. Dr. Cartin also spoke of the favorable results of a salt-free diet in cases of high blood pressure.

Dr. W. P. Shaw read a paper on "The Prevention and Treatment of Septicemia in Obstetric Cases." He summed up the causes of septicemia under two general heads, namely, preventable and accidental. In the first class of causes, the old adage, "an ounce of prevention is worth a pound of cure," is applicable. The general physical condition of the prospective mother, which includes the vulva and the vagina must be watched, and in addition the sanitary condition of the surroundings, whether or not the conditions are inviting to septicemia germs, and this includes the clothing of the patient as well as the bed clothing and condition of the sick room.

The other, or accidental class, may occur under very good sanitary conditions, and include lacerations or abrasions of the parts involved. If there be lacerations they must be treated in the best surgical manner, with repairs, followed by such antiseptic treatment as is best suited to the case.

When septicemia results, the physician will have to employ such remedies as are indicated in the conditions that are before him—elimination through the eliminating organs, reduction of temperature, etc., and most cases will get well. H. C. McKinley, Reporter.

WARREN—DECEMBER-JANUARY

The December meeting was devoted to a review of clinical work with the quartz lamp by Dr. Paul Stewart.

The chief use of light therapy is in the treatment of stubborn forms of eczema, and allied skin affections. Psoriasis, acne vulgaris and seborrhea were markedly benefited by a few applications of the sunlight lamp. Fifteen minutes' exposure to the quartz lamp at 16 inches distance produces a sunburn that would require five hours exposure to strong light to equal. Some forms of arthritis have been relieved and a number of other conditions in which it appears to be beneficial, but chiefly in external skin diseases.

There was an average attendance of the members. Committees were appointed for the annual meeting in January.

The January meeting was held at the Conewango Club and was attended by 21 members and one guest. After dinner the election of officers was proceeded with, and resulted as follows: president, Dr. Elizabeth S. Beaty; vice-presidents, Drs. E. S. Briggs and H. K. Petrey; secretary-treasurer, Dr. E. Gail Hamilton; censors, Drs. Darling, McKee and Frantz; district censor, Dr. O. S. Brown.

Dr. Wright, of Buffalo, who was present as a guest, gave a brief report of a patient he had operated on. The condition was diagnosed as a suppurative process of the gall-bladder, but on entering the abdomen, an abscess in the liver was discovered and further exploration revealed a second abscess. The man, aged 50, was in good health up to one week before, and showed few symptoms other than pain in the right shoulder and a sense of fullness across the abdomen. There was present increased leucocytosis, chills, nausea and a temperature around 102. Just previous to the operation he seemed better, less fever but with some tenderness over the gall-bladder and a high white count. It was found that there had been a mild form of proctitis present for a year or more, but causing little inconvenience. Patient had never been in a tropical country, and the abscess found did not resemble that due to ameba coli. The outcome is exceptionally grave, as it is almost impossible to reach and drain properly when there are multiple abscesses.

Dr. Weston gave an account of his recent trip to France, Germany and other parts of Europe. Dr. J. C. Russell continues to be in very poor health and the Society wishes him a speedy recovery. The new president, Dr. Elizabeth Beaty, has served our Society efficiently as secretary for a number of years and will no doubt make an active officer in her new position.

An interesting discussion followed the reading of a letter asking for our opinion on the rural physician problem. To those who were present it seemed that the people who were without physicians will have to create better conditions and coöperate if they want to get service. It was also thought necessary to give more support to hospitals in towns the size of Warren rather than to create new hospitals. Compulsory apprenticeship to country physicians as a condition of graduation is more important than interneship in small hospitals. Warren County's rural population is about one-half of what it was forty years ago, yet there are enough physicians still in country practice to care for the needs of our rural population. These people have greater facilities for reaching the doctor than they had thirty years ago and the doctor can cover more territory, too. The same reasons that have drawn the farmers' sons away from the farm are responsible for the crowding of doctors into cities and towns.

M. V. Ball, M.D., Reporter.

PENNSYLVANIA NEWS ITEMS

DEATHS

Dr. William B. Irwin, of Churchtown, who was graduated from Jefferson Medical College of Philadelphia in 1879, died of asthma on January 14th, aged 81 years.

Dr. Harry A. Mowery, of Marietta, who was born in 1849, died on February 11th. He was a graduate of the College of Physicians and Surgeons, Baltimore, Md., in the class of 1881.

Dr. Russell T. Gribble, of Fairchance, aged 63 years, died on December 31, 1923, from angina pectoris. Dr. Gribble was a graduate of the New York University Medical College, class of 1885.

Notice has been received of the recent death of Dr. Chas. S. Musser, of Aaronsburg. Dr. Musser was born in 1856, and was graduated from Jefferson Medical College of Philadelphia in 1880.

Dr. Samuel W. Rader, of Grange, aged 52 years, died recently, of an overdose of chloroform, presumably self-administered. Dr. Rader was a graduate of Ohio Medical University, Columbus, class of 1893.

Dr. Frank B. Brubaker, of Mifflinburg, aged 54 years, died on January 20th, following a long illness. He was a graduate of Jefferson Medical College of Philadelphia, class of 1892, and was also a druggist.

Dr. James M. McGee, of Philadelphia, aged 79 years, died on January 2d. Dr. McGee was graduated from Jefferson Medical College of Philadelphia in 1893. He was a veteran of the Civil War and was also a pharmacist.

Dr. Moore S. McKennan, who was born in Washington, Pa., in 1867, was graduated from Washington-

Jefferson College in 1889, and from the University of Pittsburgh School of Medicine in 1892, died of pneumonia at his home in Pittsburgh, on January 20th.

DR. HERMAN W. HECHELMAN, who was born in Germany in 1848, and was graduated from the Jefferson Medical College, Philadelphia, in 1869, died at the home of his daughter in Pittsburgh on February 7th. Prior to his death he resided in Atlantic City, N. J.

DR. HOMER F. KRAMER, Mont Alto, formerly of Oil City, died on January 12th, of meningitis, at the Waynesboro Hospital. Dr. Kramer was graduated from Temple University Department of Medicine, Philadelphia, in 1914 and was 35 years old at the time of his death.

ON FEBRUARY 11TH all Scranton paid honors to its hero, Col. Edward W. Ryan, who was laid to rest in Cathedral Cemetery. Notice of Col. Ryan's death appeared in the October issue of the JOURNAL. He was a victim of fever in Persia last September while ministering to sufferers there.

DR. GEORGE E. BAIR, who was born in 1863, died of nephritis on January 26th at his home in Braddock. He was graduated from the Western Reserve University School of Medicine, Cleveland, Ohio, in 1886, and was also graduated from the Jefferson Medical College of Philadelphia in 1890.

DR. FREDERICK A. DAVIES, of Pittsburgh, who was graduated from the Chicago (Ill.) Homeopathic Medical College in 1894, died of lobar pneumonia on January 13th at the West Penn Hospital. Dr. Davies leaves a wife, and two little daughters. Mrs. Davies is at present ill of pneumonia in the West Penn Hospital.

DR. W. K. T. SAHM, who was born in Johnstown in 1850, was graduated from Gettysburg College in 1872, and from Jefferson Medical College in 1877, died of heart disease on January 25th at his home in Pittsburgh. Dr. Sahm was chief medical examiner of the Pennsylvania Railroad Company in Pittsburgh for thirty-two years.

DR. CHARLES SCHNEIDER, who was born in Huntingdon in 1860 and was graduated from the College of Physicians and Surgeons, Baltimore, in 1883, died at his home in South Williamsport on January 24th after a long illness. His wife died about two years ago. He is survived by a son, Dr. George L. Schneider, and a daughter, Mrs. C. W. Mason.

DR. JOHN C. McCOY, of Reading, who was graduated from the Medical Department of the University of the City of New York in 1879, died on January 12th, at the Delaware Hospital, Wilmington, of gangrene of the foot, aged 66 years. Dr. McCoy was formerly clinical professor of laryngology at the University and Bellevue Hospital Medical College, New York.

DR. WILLIAM H. KLAPP, of St. Davids, Pa., aged 74 years, died on January 15th. Dr. Klapp was a graduate of the University of Pennsylvania School of Medicine, Philadelphia, in the class of 1876. He was formerly treasurer of the Central Commission of the University of Pennsylvania; also a member of the American Philosophical Association, the Historical Society of Pennsylvania and the Academy of Fine Arts.

DR. JOHN N. JACOBS, 85 years old, pioneer and virtual founder of Lansdale and Montgomery county's first comptroller, appointed by Governor Tener in 1911, died at his home in Lansdale on January 30th, following an illness of three weeks. Dr. Jacobs was a Civil War veteran and served in the Eighth Pennsylvania cavalry. He was graduated from the medical department of the University of Pennsylvania, Philadelphia, just before the start of the war.

DR. HENRY D. BEYEA, a former member of the Philadelphia County Medical Society, and who, on account of ill health, had left Philadelphia, died suddenly of cerebral hemorrhage at his home in Ware Neck, Va., on January 18th, aged 56 years. Dr. Beyea was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1891. He was formerly associate professor of gynecology and assistant demonstrator of obstetrics at his alma mater, and was on the staffs of the Gynecean, the University and the Presbyterian Hospitals.

ITEMS

DR. AND MRS. JOHN B. WOODRUFF, of Johnstown, have gone to Florida to remain until spring.

DR. CLARENCE C. SPICHER, of Johnstown, has been appointed chief on the medical service of the Memorial Hospital.

DR. JOHN B. ROXBY, of Swarthmore, is reported as doing well after an appendectomy performed at the Stomach Hospital, Philadelphia.

DR. JOHN H. MOYER, of Chambersburg, has been elected superintendent of the Chambersburg Hospital, succeeding Mrs. Elizabeth Patterson Neeson, resigned.

DR. AND MRS. JOHN B. LOWMAN, of Johnstown, are spending the winter in Florida, where Dr. Lowman is recuperating from his serious accident of last October.

DR. PHILIP R. CLEAVER, of Johnstown, was seriously injured in an automobile accident recently. He sustained a fracture of the femur and lacerations of the scalp.

DR. REID NEBINGER, of Danville, recently spent two weeks at the Roosevelt Hospital, New York City, where he was engaged in special lines of study on the cadaver.

DR. WILLIAM G. MILLER, of Norristown, has been appointed by the Court as one of the trustees for a new tuberculosis hospital, although the site for the institution has not been decided.

DR. JOHN B. CARNETT, of Philadelphia, spoke recently on the diagnosis of regions in the upper abdomen, before the Binghamton Academy of Medicine at the Kilmer Pathological Laboratory in Binghamton, N. Y.

GOVERNOR PINCHOT has announced the appointment of Dr. William A. Pearson, of Philadelphia, as a member of the board of trustees of the Allentown State Hospital, and W. S. Ross, Scranton, as a member of the board of trustees of Scranton State Hospital.

DR. C. T. FERRY, of Lancaster, recently obtained a verdict for $2,600 damages because his automobile was wrecked at the Stoney Brook crossing of the Pennsylvania Railroad on December 31, 1918. Dr. Ferry's car was being driven by a man who borrowed it without his permission.

DR. H. M. BECKER, of Sunbury, who was compelled to give up his practice for almost two years on account of ill health, is now so much improved that he feels able to resume his practice. He reopened his office on February 1st and is specializing in eye, ear, nose and throat diseases.

DR. H. L. H. DICK, of Darby, is convalescing from serious injuries received when thrown from his horse about two months ago. He sustained a comminuted fracture of the tibia and fracture of several bones of the foot. Later phlebitis developed in the injured leg, causing protracted disability.

Dr. Wilmer Krusen, Director of Public Health in Philadelphia, has resigned as Professor of Gynecology in the Medical School of Temple University. Dr. Krusen was made Professor Emeritus after more than twenty years' service. The Doctor will continue as Vice President of Temple University. A largely attended faculty reception was tendered to Dr. Krusen in Conwell Hall on February 7th.

Dr. John Walter, of Lebanon, took the oath as Mayor of that city on January 7th. Dr. Walter was the first Democratic Mayor to be elected in the city of Lebanon in the past quarter century. He declared himself on matters of benefit to the profession, such as recognition of auto emblems, traffic and parking privileges for doctors, etc.

Dr. A. Graeme Mitchell, of Philadelphia, a graduate of the University of Pennsylvania and associate in pediatrics in the University Medical School, has been appointed to the B. K. Rachford professorship of pediatrics at the University of Cincinnati, it was announced recently by F. C. Hicks, president of the Ohio institution. Dr. Mitchell will assume his duties in September and will also be director of pediatric service in municipal hospitals.

The third Bedford Lecture of the Pittsburgh College of Physicians will be given April 24, 1924, at Pittsburgh, Penna., by Dr. Frank Smithies, Professor of Medicine, School of Medicine, University of Illinois; Physician-in-Chief and Head of Department of Medicine, St. Elizabeth Hospital, Chicago, Ill. Subject: "The Origin and Development of Ethics in Medicine and their Influence on Medical Practice." The hour and place to be announced later.

The University of Pittsburgh School of Medicine will again this year offer a postgraduate course, devoted entirely to the interests of the General Practitioner, beginning June 2, 1924, and continuing for three weeks. Instruction will be by lectures, clinics and demonstrations, the fee for the course being $50.00. In addition, an optional course will be offered in the routine examination of blood, urine, gastric contents and sputa, which will be given during the week beginning Monday, June 16th. For further information apply to Edith S. Glenn, Secretary, School of Medicine, University of Pittsburgh.

GENERAL NEWS ITEMS

The National Health Council has launched a campaign for periodic health examinations. Coincident with this the Metropolitan Life Insurance Company, New York City, has produced an excellent motion picture entitled "Working for Dear Life." This film will be sent free, except for transportation charges, to health associations and other organizations desiring it.

The United States Public Health Service takes pleasure in announcing that, in response to an extensive demand for summer school work in public health, it has arranged with Columbia University, the University of California, the University of Michigan and the University of Iowa to conduct public health summer schools this year. For further information address the Surgeon General, U. S. Public Health Service, Washington, D. C.

UNITED STATES PHARMACOPEIA

Announcement has just been made by E. Fullerton Cook, Chairman of the Revision Committee of the United States Pharmacopeia that standards for whisky and brandy as medicines will be included in the new Pharmacopeia now being revised. This is in response to a demand by the physicians of the country.

Under the national prohibition laws, whisky and brandy are classed as medicines and as such are legally prescribed in many cases of serious illness, but at the present time no legal standards exist for their purity.

UNITED STATES CIVIL SERVICE EXAMINATION

The United States Civil Service Commission announces an open competitive examination for Medical Interne (Psychiatric).

Applications will be rated as received until June 30th. The examination is to fill vacancies in Saint Elizabeth's Hospital, Washington, D. C., at an entrance salary of $1,200 a year and maintenance. Appointees may also be allowed the increase of $20 a month granted by Congress.

Applicants must have graduated from a recognized medical college, or be senior students in such an institution and furnish proof of actual graduation within eight months from the date of making oath to the application. Applicants must not have been graduated prior to the year 1920 unless they have been continuously engaged in hospital, laboratory, or research work along the lines of neurology or psychiatry since graduation.

Competitors will not be required to report for examination at any place, but will be rated on their general education, technical training and experience.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the board of U. S. civil service examiners at the post office or customhouse in any city.

NOTICE OF EXAMINATION FOR ENTRANCE INTO THE REGULAR CORPS OF THE UNITED STATES PUBLIC HEALTH SERVICE

Examinations of candidates for entrance into the Regular Corps of the U. S. Public Health Service will be held at the following-named places on April 7, 1924: Washington, D. C., Chicago, Illinois, San Francisco, Calif., New Orleans, La.

Candidates must be not less than twenty-three nor more than thirty-two years of age, and they must have been graduated in medicine at some reputable medical college, and have had one year's hospital experience or two years' professional practice. They must pass satisfactorily, oral, written and clinical tests before a board of medical officers and undergo a physical examination.

Successful candidates will be recommended for appointment by the President with the advice and consent of the Senate.

Requests for information or permission to take this examination should be addressed to the Surgeon General, U. S. Public Health Service, Washington, D. C.

Dr. O. Pine queries: Is it not better to be the monarch of a moderate community practice than a servile chief of staff in a palatial institution of renown?

A Surgical Drama:
Act I —A history.
Act II —A bistoury.
Act III—A mystery.—*O. Pine.*

THE

MEDICAL SOCIETY OF DELAWARE

ORIGINAL ARTICLE

DIABETES MELLITUS*

EDWARD M. VAUGHAN, M.D.

MIDDLETOWN, DEL.

(Concluded from February number.)

TREATMENT: In 1916 Metchinkoff, the French scientist and author, sent over to some New York physicians a culture to be used in the treatment of some diabetic patients for its cleansing effect on the alimentary tract. It was discovered, on using, that a marked lowering of the sugar index resulted. The same year Strauss, of the University of Berlin, speaking before the members of the Northern Medical Association of Philadelphia, presented his views on the oat cure. He declared good results could be obtained through flour cures. This was a regulated diet of wheat flour and the flour of unripe bananas. Rollo was the first to advocate dietetic therapy, the proper means of controlling the disease.

In 1922, Banting and Best brought forth their wonderful insulin, which has raised the hopes of all so afflicted in its wonderful results.

We are able by laboratory tests to control our results with greater accuracy. Sugar free urine leaves little strain upon the functions which utilize carbohydrates. In some there is marked improvement. In severe cases the disease is only checked, while in others there is a downward progression. The urine must be kept sugar-free. One-half to one per cent is not safe. A mild case in young or old may progress rapidly.

The disease cannot be treated in a routine manner. Each individual must be treated according to his tolerance, symptoms, severity and complications. Every diabetic should be his own nurse and dietitian and it is up to him to prolong his life. Indiscretions in diet should be impressed upon him as dangerous—the fact that he cannot live within his tolerance to-day and to-morrow, and next month go off on a "sugar drunk" by indulgences and then by a strict diet hope to overcome his delinquency. It cannot be done. Such indiscretions lessen his carbohydrate tolerance and lower his physical standard. A mild case of diabetes will yield to the elimination of carbohydrates and does not reappear if 100 grams of bread is added to the dietary. In a moderately severe case sugar disappears on restriction of food, but on addition of the smallest amount of carbohydrate sugar shows. In a severe case sugar cannot be removed from the urine by eliminating all carbohydrates and restricting protein intake and if acetone bodies present, the case becomes grave.

Starches and sugar are needed in the diet. Hare says sugar is an unnecessary article of diet. If these are removed sugar may disappear from the urine but the cause of the trouble has not been removed. How shall we decide the amount of carbohydrates, fats and protein? First, by finding the individual tolerance. When a patient first seeks advice he has usually been without treatment. The blood sugar may be only moderate, acidosis probably negative. Here conservatism should be exercised. With a too sudden change in diet acidosis might develop with great severity. A fair amount of carbohydrates would be the best treatment. If this makes the patient sugar free continue the same diet for some weeks, gradually adding carbohydrate in the form of bread or the 5% vegetables. Examine urine frequently and if no sugar appears the tolerance is tested by giving 100 or 200 grams of bread or vegetables 5%. If sugar shows with 200 grams of the named diet but is absent with 100 grams the tolerance lies between the two. It is wisdom to allow only 2/3 of the carbohydrate tolerance. As long as ketone bodies are absent the organs can exist some time on such a diet. With a low carbohydrate tolerance, protein is added in small amounts until sugar shows or a sufficient amount of protein is taken to meet the basal requirements.

Fats are added during the same period in sufficient amounts to meet the fuel requirements of the body, until sugar or acidosis appears. At this stage fasting is required for about five days; then beginning with half amount of carbohydrates, gradually increasing the quantity. Body fat is reduced and the adult is not allowed to gain, but should keep 15% below normal weight.

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*Read before the Medical Society of Delaware, Middletown, October, 9, 1923.

Children may gain, but be sure it is not adipose tissue.

Exercise is useful to the point of fatigue. The very weak must seek their bed. Plenty of water, tea and coffee is given. Alcohol may be given but is not essential. Bread is not allowed, although with insulin, patients are now using wheat bread. By so doing it robs them of many other vegetables, for their tolerance is soon absorbed by indulging in such a heavy carbohydrate. Gluten bread is unsafe. Listers starch-free flour is used. Bread made from this becomes palatable and is a good medium for the use of butter. The proteid in this bread must be considered. Drugs are used when occasion calls. The bowels must be kept open. Crystallose and saccharine for sweetening is allowed. Small daily amounts are not injurious. A fast day once a week, with 50% reduction in food, should be observed.

A very important point is the teaching of individual urinalysis, the use of the scales for accuracy and a knowledge of percentages of food values.

Most practitioners follow the starvation method of Allen, for blood sugar reduction; others are not in sympathy with his treatment, believing that more harm is done and deprivation of food too severe, the patient being made weak, morose and uncomfortable, and that it is wiser to battle with a small per cent of blood sugar and preserve the strength and comfort of the patient.

R. T. Woodwatt and others of Rush Medical College in the past few months have made extensive researches and studies in diet in diabetes. They have found a certain amount of sugar will cause a certain amount of acids in the blood to disappear. They are trying to alleviate the disease in their plan of diet containing a certain amount of protein, fats, starches and sugars,

The acids in question are produced mainly from eggs, meats, milk, cheese and nuts and also from fats and oils, while sugar is produced from the foods just mentioned, in conjunction with the oils, fats, starches and sugars in food.

How much of these two groups of acid and sugar-forming foods should be allowed, so they can take care of each other in the blood? This is determined by weight, the nutritional state of the patient and muscular activity. The rule today is low protein, low carbohydrate and high fat. The caloric needs are the same as those of a healthy man equally active—35 calaries per kilogram of weight. If he cannot utilize the carbohydrates he must increase his caloric values in fats and protein. The important phase is the impaired tolerance to carbohydrates. By not overtaxing this tolerance, the power of assimilation is increased and the outlook more hopeful.

Is Fat Advisable? Allen and Sherrell claim that quantities of fat have failed to control the more severe cases and the general overload of fat gradually lowers the patient's power to utilize sugar and it appears in the urine. Finally, the excess of fat in food produces an excessive amount of acids in the blood and coma is the result, for there must be a certain amount of sugar in the blood to cause these acids to disappear. The attempt to save body fat is contrary to the principle of the undernutrition treatment, which is that the body weight must be reduced in proportion to the severity of the diabetes as the only effectual means of keeping the symptoms under control. The main point in the diet is that the old idea of building up the body weight is rejected and the best plan is to keep the patient's weight at the best level permitted.

Allen states that undernutrition accomplishes three things: 1, it lowers the body weight so that the same amount of food in reality represents a large amount; 2, it lowers the actual needs of the body so that the patient does not require so large a quantity of food; 3, it raises the power of the patient to utilize all the different foods.

Insulin: The active principal from the islet tissue of the pancreas of animals has been found to be of inestimable value in the treatment and its complications. It is not a cure, but enables a patient to utilize carbohydrates in a normal manner, to regain health and maintain strength and normal activity, so long as the extract is continued. The future will reveal the final outcome of cases so treated. Some show an increased tolerance for carbohydrates, while others after months of treatment must continue to take the same dose to keep them sugar free on a similar diet.

Insulin is a specific in the treatment, but the management of the diet is still imperative. No stated dose is given, but must be worked individually. A few of the severe cases have nedeed more than 45 units daily. The majority have responded well to 10 to 20 units. The initial treatment is better, if given in a hospital. The patient must be taught to give the injection. The injection is given subcutaneously and not too near the skin surface. An occasional blood sugar determination is advisable.

The treatment, to succeed, lies in the correct balancing of diet against the dose employed, and a persistent watching by the physician and patient. Insulin is now of uniform composition. Its unitage constant. The amount of insulin varies often for the same individual, but as a rule, in severe cases 1½ to 2½ grams of additional glucose to each unit of insulin is allowed, increasing the amount in mild cases to 3 to 4 grams. It is administered ¼ to ½ hour before meals. The effect is shown for at least six hours and in some cases as long as 12 hours.

After the patient is desugarized you allow 5 to 10 grams carbohydrate, 10 to 20 grams of fat, to yield 100 to 200 calories. If sugar appears in the urine in fair amounts for 2 or 3 days, the patient is again desugarized, by increasing the dose of insulin. Further additions of carbohydrate and fat are made to the diet in approximately the same amounts and proportion as were previously used. If no sugar appears for 2 or 3 days a further similar addition to the diet is made. In the event sugar appears in significant amounts a corresponding dose of insulin is employed. Continue this increased amount of food and increased amount of insulin until the patient is receiving the required amount of carbohydrate, fat and protein to afford a final diet that is safe. By increasing the diet and increasing the insulin in the above manner you lessen the danger of hypoglycemia.

If 3 daily injections are needed you may reduce this to two, night and morning; if no more than 15 units are used, one injection before breakfast is sufficient. When 2 injections are given daily the evening dose may be less, to combat the risk of nocturnal hypoglycemia. Blood sugar tests are not actually necessary if the patient will make his urinary test.

The patient should be familiar with the symptoms of hypoglycemia. A constant sugar excretion is not advisable, but a trace occasionally shows a safe dose of insulin is being used.

Mild cases have not received treatment, due to scarcity of insulin. It would be of great value in these cases to tide them over illnesses or infection.

When Is the Proper Time for Administration of Insulin? When a patient continues to excrete sugar after several days on the original test diet, and when the average excretion of sugar exceeds 10 grams a day and seems to be constant.

Intarvin: This preparation recently has been advocated in the treatment. It is claimed to be an immediate fat and can be easily assimilated. Specialists who have used this preparation claim no advantages have developed, and insulin must still be used.

Acidosis is due to an intoxication with certain lower fatty acids. The most important one is beta-oxybutyric acid. This is associated with the presence in urine of diacetic acid and acetone. There are numerous tests for these acids. Insulin is of great value in this complication. The dose varies with the severity of the acidosis. Early administration is imperative and may be made either intravenously or subcutaneously.

Coma in diabetes may not always be due to acidosis. Consider cerebral hemorrhage, uremia, meningitis and septicemia. The administration of insulin in this complication has been attended with marked satisfaction and wonderful results.

The Dangers of Insulin: Hypoglycemia, the lowering of blood sugar below the normal level (100 mg. per 100 c.c. of blood, or 0.10%) is the principal danger. The symptoms are: 1, sudden hunger and sudden weakness; 2, restlessness, described as inward trembling; 3, pallor or flushing of face; 4, increased pulse rate in children. Extreme symptoms in a large overdose of insulin are: 1, sweating, tremor, fear, vertigo, diplopia; 2, convulsions, low blood pressure and unconsciousness.

Treatment: Carbohydrate in some form is given in the early stages. In the later stages give orange juice, sugar, syrup or glucose by mouth, or if necessary by stomach or nasal tube. Give drugs when needed.

Points To Be Remembered

1. Dietary regulation of diabetes is even more necessary with the insulin treatment, than without it.

2. Keep the body weight slightly below normal for age, sex and height.

3. Lower the dose of insulin or omit it when there is vomiting or diarrhea not due to acidosis.

4. When a meal is omitted, omit the preceding dose of insulin.

5. If supply of insulin becomes exhausted omit 1/3 of the diet until a new supply of insulin is obtained.

6. Local infections, febrile diseases and coma make larger doses of insulin necessary to render the urine sugar free, and the dosage must usually be reduced as these conditions improve or disappear.

7. Hypoglycemia is more serious than hyperglycemia.

8. As long as small amounts of sugar are excreted too much insulin is not being used.

9. Remember the symptoms of an overdose of insulin. The patient should carry always some form of carbohydrate as an antidote.

10. Coma in a diabetic may not be true diabetic coma from acidosis. Look for other causes.

In the administration of insulin the secret of success lies in the correct balancing of the diet against the dose, and extreme watchfulness by physician and patient.

DISCUSSION

Dr. G. W. K. Forrest (Wilmington, Del.): I congratulate Dr. Vaughan upon the paper he has just read. I know that it has taken a great deal of time and effort to prepare such a paper on that topic, and I am very much pleased to hear such a thoroughly prepared discussion of the subject.

There is one thought he brought out that I want to emphasize, and that is the tendency among patients to go off on a sugar drunk. It is almost impossible to hold these fellows down. Some years ago I told a woman of the extreme danger of her eating such a large amount of candy. She said she did not care, if she had to do away with sugar she would rather die. To give you some idea, she would eat about five pounds of sweet chocolates at a time in her condition. Of course she was of a low type. I have seen the same difficulty right straight along. Even with the treatment by insulin, it is difficult to accomplish the best results unless patients are under the constant supervision of someone who probably has more force than the patients themselves in controlling their vicious appetites.

Dr. C. P. Noble (Philadelphia, Pa.): I had no intention of discussing diabetes when I came to Delaware; in fact I came to hear all of you talk. I intend to speak of my experience with this disease. I have had many cases of diabetes in my time, coming particularly for diagnosis. They come frequently for gynecological troubles. The majority come for laboratory inspection. You do not have to have the urine examined. Merely inspect the vulva. These patients, in my experience, were all past middle age. At that period of life women are not quite as clean in their toilet as when they are younger, and the saccharine urine gets on the vulva, and its fermentation irritates the skin and causes the local itching. I have had a considerable number of these cases—perhaps 50 to 100.

I might say something about the cause of such cases. The trouble is a local itch caused by fermentation. The family doctors shy off from such patients more than any other class of cases. These cases were usually left in my care, or at least referred back to me. I made a special life history of one or two patients. It did not interfere with their length of days. There is a large group of women who have this ailment, yet they live just as long as if they did not have it. So far as treatment was concerned, to cure them locally, the application of a mild alkaline antiseptic was used to get rid of the itching. When the fermentation was stopped, that ended the itching. So far as the management of this patient was concerned, it was necessary that she slow down and be a little less active, and more cautious in her diet as regards things containing sugar. That was all that was ever done with any of these patients, and they all did perfectly well. They were not sugar free, but still could do anything, provided they left off 10 to 20 per cent of the activities and otherwise lived a little plainer, more healthy life.

I read something recently which impressed me very much, that is that you can get insulin from other things than the pancreas, such as all sorts of vegetables. I believe that the instincts of animals and human beings are very valuable to healthy living. If there is anything deeply planted in the human constitution, it is the instinct to get fresh vegetables whenever possible. You know my health has been poor at different times, so that I have lived all around everywhere, at the seashore or the mountains, under various difficulties and hardships. In the Rocky Mountain country where I spent about three years, the people lived on canned food, and these people go wild for fresh vegetables, just like a horse in the spring for green grass. Just as a horse will almost spring out of its shafts for grass, these people are just wild for onions; they will go 100 miles to get them. Some scientist is getting insulin out of onions, which means this necessity of humanity has got some other source than pancreas.

Now comes the temptation to say what I had better not say. I have been working out things which have interested me for many years. Part of them we are solving, and while I am not ready to publish this yet, I am going to make a few preliminary remarks. Why do people get diabetes? So far as my experience goes, the people that apparently have it say it is hereditary, but where heredity did not figure, they got it for some other reason. As regards the sugar drunks, I do not believe that that is a disease, it is just a contributory factor. In other words, speaking now as a biologist instead of a physician, we all live around a sewer, which is not a very sanitary place in which to live. The question is, what is the relief of that deposit? If the sewer is not kept clean the solids leak through, and that is what makes us sick. Some think that if the bowels move every day that is sufficient, but that is not half enough. Two or three times a day is not too often to clean out the sewer.

Dr. H. W. Briggs (Wilmington, Del.): I have never considered a case of diabetes past the age of 50 as a really serious condition, and I have never had any difficulty with a case that would follow strictly the instructions given. I believe that after the age of 50, diabetes can be absolutely and entirely controlled by adhering to such a diet as might be given by the physician. In the earlier stages, probably it is more vital and more serious. I enjoyed Dr. Vaughan's paper very much.

Dr. E. M. Vaughan (Middletown, Del.): As regards insulin being made from vegetables, I also read a statement that a French chemist has made a synthetic insulin the same as ours.

Dr. R. G. Beebe (Lewes, Del.): I should like to congratulate Dr. Vaughan. I was in Pittsburgh at the Pennsylvania State Medical Society, and they had a symposium on diabetes. There were present some of the most famous men in the country on such cases, and I do not think that Dr. Vaughan has missed a "trick." He had all I heard there and a little more too.

The President: It is gratifying that our own men are up and doing and take the time to prepare such papers.

EDITORIAL

THE PROHIBITION MUDDLE

We have fairly reached the point where this latest attempt to reform a nation by decree is in a state which may well be called a muddle. Previous attempts of the same nature had failed. Moses tried it with his ten commandments a few centuries back, and there are still quite a number of persons who do not observe them. In fact, we believe their number is even larger, by some millions, than the number of individuals who take a swig of bad liquor on the sly. Yet, the commandments have had the backing of authority, both secular and divine, with dire punishments threatening the offender, on this earth and in the life to come. A bit earlier prohibition was tried on the original pair of humans, and the dismal failure of that attempt shows the weakness of human nature. Somehow, when coercive measures run counter to organic pleasures or elemental urges, they are doomed to failure, a fact not recognized by our reformers.

As it is, the individual must evolve numerous inhibitions and repressions in order that he may fit into the social structure. This is accomplished by the formation of habits of behavior, a task which is by no means easy. To make this task more difficult, by unwise legislation, is to invite trouble alike for the individual and society. As a matter of fact, the habit of temperance has been forming gradually, and were it not for the sudden jolt made by the precipitous Eighteenth Amendment, alcoholism, as a social menace, would have disappeared in the course of two or three generations. With the advent of prohibition, temperance disappeared. The drinker is intemperate, the dry is equally intemperate: one with his liquor, the other with his vituperative denunciations. Intolerance has become the order of the day, and hysteria the prevailing mental state.

As the net results of prohibition, so far, we are witnessing increase in crime caused by an activation of anti-social tendencies, which are always latent in a large proportion of our population. Prohibition is now a challenge to individual liberty, and many a person who has been and still is in every other respect a law-abiding citizen has taken up the challenge. Personal liberty has become a fixed tradition with the American people and prohibition attacks this fundamental principle of popular government. Worse than this, prohibition has created a bureaucracy of no mean magnitude, with its inevitable graft and corruption. The evil effects of this new monster are seen daily, and are justly dreaded by the right thinking people.

It is well to remember that the prohibition amendment was passed at a time when war-hysteria was the prevailing emotion and individualistic tendencies in a state of suppression. It was to "save food to win the war," that the alcoholic contents of beer were reduced, and, while the individual citizen was still under the hypnotic spell of self-denial for the common good that the amendment was passed.

With the nation sobered up, public sentiment is decidedly against prohibition, as shown by the polls conducted by the *Journal of the American Medical Association,* the *Literary Digest,* and *Collier's Weekly*. If we take into consideration the fact that on the side of the drys are the bootleggers, the officials of the prohibition enforcement bureau, and the professional reformers of the Anderson type, the results of the polls indicate a sentiment very much in favor of the "wets." No one wants to see the saloon back, neither does the American citizen want to surrender the one cherished principle—"personal liberty."

A. R.

LITTLE JOURNEYS IN GENERAL PRACTICE

BY A GENERAL PRACTITIONER

THE IMPRESSIONISTIC DOCTOR

It is now two a. m. I have just returned from a six-mile ride in the country, one of those tiresome, more or less nerve-racking confinement cases where the head is in correct position but the pelvis isn't—or to be more correct, the child is in the proper position but the mother isn't. And the attendant nurse, instead of helping matters, is making them worse by making suggestions. She is constantly telling the patient, and the physician as well, how "Doctor So-and-So always insists upon the patient being in the knee-chest position when the pains come on, etc." She has "been with Dr. So-and-So in over a hundred cases, and he always is successful; he is so accurate." And then again, "Dr. So-and-So is always particular to see that the patient's heart is good, etc., etc." Of course this kind of talk is always very helpful to the patient and a great aid to the attending doctor! Well, I tired of it, so came back home for a couple of hours to rest up. Therefore, if you think this Journey somewhat dull, blame my present confinement nurse —which brings me to Dr. So-and-So.

Now Dr. So-and-So isn't always a bad fellow; sometimes, in fact, he is a fairly good physician, though he is seldom an exceptionally able one. He should have been an actor instead of a doctor; and then again I sometimes believe he missed his calling when he failed to become the scarehead editor of a yellow newspaper. However, we all meet up with him, both in the city as well as in the town and country.

The particular Dr. So-and-So that my to-night's nurse spoke of, is a typical specimen of the man I have in mind. To begin with, he refuses to act until the stage is properly set. He must have the proper lighting effect, the right scenery and the correct stage before he can perform. For instance, I was forced to call in a consultant to assist me in a difficult forceps case some time ago, and after phoning to two of my fellow practitioners, and finding one of them out of town and the other with a broken arm, I called in Dr. So-and-So. He was good enough to come, but he impressed the family with the fact that had it not been for the fact that he knew they were reported as rich he couldn't possibly have assisted me—that he only cared for wealthy and "cultured" patients and wouldn't think of treating the "riff-raff." Then he proceeded to unpack his bag, and when he "got on the job," which was simply to administer the ether while I used the blades, he was completely attired in a duck suit, trousers, coat, apron and all, even to white shoes! He also took particular pains to go down stairs where the family was waiting, to get a towel or something, so that they could all see him in his "hospital white." I might also add that he sterilized and scrubbed up more than I did—and he only administered the ether.

I have nothing to say about his treatment of myself. He was courteous and professional. He did his work well; but(and here's the rub) he made a most decided impression on the family, the patient, and particularly the attending midwife! I did the work—but he got most of the praise!

Now this particular gentleman will never see a patient before ten in the morning. Though he is practicing in a "town," he keeps office hours religiously. If a man breaks his leg, he must break it between ten and twelve in the forenoon, or six and eight at night, otherwise he must await his turn. I am not objecting to this system, because it teaches the public that they cannot break limbs, have accidents, or demand a doctor's attention except at certain hours. In time they may get the proper habit.

But Dr. So-and-So, like the matinee idol, must also dress himself properly. I have never seen him that he has not had a flower in his buttonhole. Regardless of the season, like the tax collector, the flower is always present. Then too, he always has a most immaculate shirt and a highly polished shoe. I am not sure, but I sometimes believe that he powders his nose, and he uses an expensive perfume. I know it's expensive because my wife uses the same kind.

Now let me take you, in my journey, to Dr. So-and-So's office. I'll grant you he is clean, even though he is dandified. I'll admit he is a fair doctor, even though he does dress up in white and uses big professional words in his conversation with patients. I'll admit he is a good actor, even though he does wear a flower and use powder and perfume. And his office also seems to follow out his general plan of "P. T. Barnumism." (You recall Barnum said that the public loved to be fooled.) Well, Dr. So-and-So has his office so filled with good-for-nothing electrical apparatus, amputating saws, elaborate life-size charts, and a full bookcase of obsolete medical books that there `is hardly room to turn around. He has two or three card index systems, and a specialist's cabinet or two. He even has a completely wired skeleton. Before he will give a patient even a dose of castor oil he fills in a long case history card that equals in length (almost) the average insurance examination blank. Then he submits the patient to a thorough test of knee and eye reflexes, takes pulse, temperature, and in most cases a complete examination of heart and lungs. By the time he finishes, the patient is thoroughly satisfied that he is very sick indeed, and he promises to come back regularly, and in many cases does, whether there is anything the matter with him or not.

I might add right here that several patients, whom I always believed thoroughly well organically (and still so believe), insist that they have very "bad hearts" because Dr. So-and-So once gave them the most thorough examination they ever had and said that they had a "bad heart." (I have never quite learned what a "bad heart" is. Of course, I am not good-looking enough to be a sheik, nor have I the manner or words of Romeo; so I cannot quite get on to the "bad heart stuff.")

It always seems somehow, that these "play-actor doctors" invariably have three or four women who perpetually "boost" them. These women go about telling every sick person they know how wonderful Dr. So-and-So is, and that if they do not get well in two or three days they ought to change doctors. I knew one man in a near-by town who paid three or four gossips a percentage on all patients they sent to him. I also knew another man, very well, who made desperate love to several women whom he thought could help him. He sent them presents, took them to the city on pleasure trips, and nearly caused a general breaking up of two or three families—*but the women always stuck by him* and "fought" to send him patients!

Now these doctors try to impress their patients and the general community with "show," not with ability. They have the whole countryside praising their "actions," not their cures.

Patients leave dependable physicians to go to the "show" doctor. He reaps twice as much harvest in dollars as his fellow doctors—but does he keep his patients?

How many of my readers can point to some competitor in his neighborhood who answers the description of Dr. So-and-So? and how many of your patients has he taken? And again, like the bread cast upon the waters, how many of them have "returned to you after many days"?

The gentleman who moves frequently, who boasts of a new car, a fancy chauffeur, an elaborate office with ornate fixtures, and a "society air" and movie actor clothes seldom is a good doctor or even a dangerous competitor. A lover, a "billboard poster" sort of dresser, a man who is all show, is generally a very poor doctor, and while the public likes this kind of chap when they are only slightly indisposed, they usually send for a real doctor "minus all trimmings" when they are real sick.

Why cannot we doctors be human all the time? Why cannot we realize that "all is not gold that glitters," and that if we study our cases and are honest with our patients as well as with ourselves, and devote our efforts to curing our cases instead of "impressing" them, we will be doing not only our professional duty but God's work as well? If our patients leave us once in a while for the new "Show Doctor," they will usually come back to roost when they get really sick.

LETTERS FROM ABROAD

Halle Saale, Germany.

Dear Doctor: There is not very much I can tell you about Vienna. One finds here a regular organization. There is an American Medical Association which has club rooms, a very large library in English, and a paid secretary. The Association has arranged with the teaching staff of the University of Vienna for postgraduate courses with stipulated prices, which is a great help, as otherwise one would be forced to pay enormous sums to get any work at all. The courses are arranged by the secretary and you pay your money to the secretary, so that there is no come-back from the teaching staff. They sign a receipt for all the money paid—a very satisfactory arrangement.

Besides all this the club rooms are a meeting place. Mail addressed there is taken care of, and one can receive all sorts of information in reference to the city, customs, passports, etc.

The courses are chiefly practical upon living patients. Some are didactic. One can obtain all kinds of cadaver work from the big men themselves. Operative work upon patients, unless of a minor kind, is not allowed as a rule. The state law forbids that.

On the whole one can get very good postgraduate work. The cost of the course will vary with the kind of work taken. Didactic work, of course, is cheapest. As the number of men is not limited, the professor usually gets from four to five dollars an hour. Practical courses are

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FILL IN AND MAIL TO THE SECRETARY OF YOUR COUNTY MEDICAL SOCIETY TO-DAY

To .... County Medical Society, Dr.

....

To Annual Dues ....

County Society for 1924 .... $..................

Medical Society of Delaware for 1924 .... $4.00

Total .... $..................

Secretary .... County Medical Society:

I enclose { Draft / Money Order / Check } for $ ...., being my County Medical Society Dues and $4.00 Dues for the Medical Society of Delaware for the year 1924.

Name ....

Address ....

....

limited to three men. That means nearly two dollars an hour. If one takes much work, of course, it runs into considerable money. I have spent a good deal of money doing work by myself; I had to pay for the privilege, but I think it was well worth it.

I am now in Germany and have been here for three weeks. My work under Selheim has been very pleasant and not as costly. I get three sessions daily. In the morning operations I have been assisting him, and every now and then he assists me. We usually have from three to five operations every morning. After that I make rounds through the wards with his assistant. At twelve-thirty we have dispensary, where I work with the *oberartz*. At four in the afternoon I receive an hour's instruction in examination of patients, from Selheim himself. Some afternoons we have four patients anesthetized. I must be able to feel and describe everything he finds in the patient. I can assure you that I never saw a man as thorough as he is. After that the assistant gives me an hour's work upon anesthetized patients. Of course, the therapy is discussed in every case. At six o'clock the assistant usually has four or five cases that have been admitted that day. Every one is examined by both of us and the findings written up as well as the history and the treatment instituted. To finish the day, we make rounds again. Besides all this, there is emergency work now and then, for all of which I am called, even at night.

I expect to go to Berlin, where I have made arrangements to do operative work. I shall write you later about Berlin after I get there.

I find the German people very good; in fact, I like them much better than I do the Austrians. They are much more friendly. About the political situation I will not write, as it would take up so much more time and space. Suffice it to say that conditions here are very bad, but I do not think acute.

Sincerely yours,
Jacob S. Keyser.

BOOKS RECEIVED

Sexual Problems of Today. By William J. Robinson, M.D., President American Society of Medical Sociology, President Northern Medical Society of the City of New York, Editor of the *American Journal of Urology* and of *The Critic and Guide*, etc. Twelfth Edition. New York: The Critic and Guide Company, 12 Mt. Morris Park West, 1923. Price $2.00.

Hernia. Its anatomy, etiology, symptoms, diagnosis, differential diagnosis, prognosis, and operative treatment. By Leigh F. Watson, M.D., Associate in Surgery, Rush Medical College, Chicago, Ill. 232 original illustrations by W. C. Shepard. St. Louis: C. V. Mosby Company, 1924. Price $11.00.

Practical Chemical Analysis of Blood. A book designed as a brief survey of this subject for physicians and laboratory workers. By Victor Caryl Myers, M.A., Ph.D., Professor and Director of the Department of Biochemistry, New York Postgraduate Medical School and Hospital. Second revised edition. Illustrated. St. Louis: C. V. Mosby Company, 1924. Price $8.50.

Management of the Sick Infant. By Langley Porter, B.S., M.D., Professor of Clinical Pediatrics, University of California Medical School, and William E. Carter, M.D., Assistant in Pediatrics and Chief of Out-Patient Department, University of California Medical School. Second revised edition, illustrated. St. Louis: C. V. Mosby Company, 1924. Price $8.50.

Geriatrics. A treatise on the prevention and treatment of diseases of old age and the care of the aged. By Malford W. Thewlis, M.D., Editor, *Medical Review of Reviews*. Second edition, revised and enlarged. St. Louis: C. V. Mosby Company, 1924. Price $4.50.

Health Confessions of Business Women. By business women. Division of Industrial Hygiene, Provincial Board of Health of Ontario, Spadina House, Toronto, December, 1923.

Intranasal Surgery. By Fred J. Pratt, M.D., F.A.C.S., and John A. Pratt, M.D., F.A.C.S., both assistant professors, Eye, Ear, Nose and Throat, Medical School, University of Minnesota. Illustrated with 195 half-tone engravings. Philadelphia: F. A. Davis Company, 1924. Price $5.00 net.

Intravenous Therapy. Its application in the modern practice of medicine. By Walton Forest Dutton, M.D., Medical Director, Polyclinic and Medico-Chirurgical Hospitals, Graduate School of Medicine, University of Pennsylvania. Illustrated with 59 half-tones and line engravings, some in colors. Philadelphia: F. A. Davis Company, 1924. Price $5.50 net.

Fighting Foes Too Small to See. By Joseph McFarland, M.D., Sc.D., Professor of Pathology in the Medical Department of the University of Pennsylvania. Illustrated with 64 engravings. Philadelphia: F. A. Davis Company, 1924. Price $2.50 net.

Poison Mysteries in History, Romance and Crime. By C. J. S. Thompson, M.B.E. Philadelphia: J. B. Lippincott Company, 1924. Price $3.50.

Surgical Pathology. By Joseph McFarland, M.D., Sc.D., Professor of Pathology in the Medical Department of the University of Pennsylvania. With 435 illustrations. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut Street. Price $9.00.

Practical Electrotherapeutics and Diathermy. By G. Betton Massey, M.D., Fellow and Former President American Electrotherapeutic Association; Member Philadelphia Obstetrical Society, etc. New York: The Macmillan Company, 1924.

A Physician's Manual of Vaccine Therapy. By G. H. Sherman, M.D. Press of the Bacteriological Laboratories of G. H. Sherman, M.D., Detroit, Mich. Price $1.00.

BOOK REVIEWS

TONSILLECTOMY. By means of the Alveolar Eminence of the Mandible and a Guillotine; With a Review of the Collateral Issues. By Greenfield Sluder, M.D., Fellow of the American College of Surgeons and Clinical Professor and Director of the Department of Rhinology, Laryngology and Otology, Washington University School of Medicine, St. Louis, Missouri. With ninety illustrations. St. Louis: C. V. Mosby Company, 1923. Price $5.00.

Dr. Sluder states that his primary object in writing this book is to present the "Sluder Method" of tonsillectomy. He gives as one of his great reasons for the use of the "Sluder Method" the rapidity with which the operation is performed and argues in favor of nitrous oxide anesthesia. He says "unless the tissues be infiltrated with adrenalin, I doubt whether any procedure

(Continued on page xiv.)

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ORIGINAL ARTICLES

SYMPOSIUM ON ANURIA

POSTOPERATIVE ANURIA*

F. E. KEENE, M.D.
PHILADELPHIA, PA.

This paper has to deal with postoperative anuria in cases other than those operated upon for stone in the urinary tract. My remarks are based on facts obtained from a review of the literature rather than from personal experience, for in eighteen years' association with active general surgical and gynecological hospital services no such complication has come under my observation. It was with some hesitation, therefore, that I accepted your chairman's invitation to present a paper on this subject, but I did so in the hope that a summary of the opinions expressed by others who had met this serious complication might be of value.

We may define anuria as a condition in which no urine enters the bladder. It is quite evident that for such a condition to arise three factors are essential, viz., suppression of urinary secretion, blockage of urinary outflow or a combination of the two. Therefore for purposes of simplicity we can speak of a secretory anuria and an excretory anuria. The former arises from defects in renal function due to alterations in its nerve or blood supply or to pathologic changes in the renal parenchyma; the latter to some lesion producing obstruction along the course of the ureter.

It is with the secretory anuria that we are especially interested from the standpoint of both its pathogenesis and treatment, and a review of the literature bearing upon these points shows that no definite conclusions have as yet been reached. It is worthy of note, however, that the literature of the past few years contains fewer references to postoperative anuria than that of a decade ago and this is easily explained, in our opinion, by the fact that we now have at our disposal means of accurately determining renal function, reserve and pathology which were denied surgeons of the past generation. There is no branch of medicine in which the refinements of diagnosis are more accurate than those dealing with lesions of the kidney, and I am firmly convinced that with more intensive application of these methods, anuria will become even a rarer postoperative complication.

It is unnecessary to detail the various lesions of the ureter or renal pelvis which may lead to an excretory anuria. Suffice it to say that the integrity of the ureter of the normal kidney should be determined before removal of the diseased kidney is undertaken, for congenital or acquired ureteral anomalies are by no means uncommon and may exist with but few if any noteworthy subjective symptoms.

As a gynecologist, I have been especially interested in studying the relationship existing between the urinary organs and diseases of the female pelvis, and such observations demonstrate clearly how readily obstruction of the terminal ureter may occur, not through direct trauma, as by ligature, but as the result of occlusion incident to the edema produced by operation. Extensive edema of the bladder base is particularly noticeable following a complete hysterectomy and an anterior colporrhaphy for large cystocele. Such an edema affects not only the bladder wall but the intravesical portion of the ureters as well and may lead to partial or complete occlusion of the ureteral lumen. The fact that greatly diminished urinary output often occurs for twenty-four to forty-eight hours following an extensive anterior colporrhaphy would offer clinical evidence that an incomplete obstruction of the terminal ureters is of common occurrence and in several instances we have substantiated such evidence by cystoscopic examination, finding that because of the edema, catheterization of one or both ureters was impossible. It is not a far cry, therefore, to assume that a complete anuria might result from such a cause, and knowledge of this fact would be of great value in directing appropriate treatment. A case illustrating this point is reported by Dietrich (Ztsch. of Gynäk. Urol., Leipz., 1913, IV, 134-137) in which an anuria occurred secondary to panhysterectomy for carcinoma of the cervix.

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Cystoscopic examination showed extensive edema and terminal obstruction of both ureters. Intravesical instillation of 200 c.c. of a 1-1000 adrenalin solution was efficient in reëstablishing the flow of urine within twenty-four hours.

Parametrial inflammatory exudates, intraligamentous tumors and carcinoma of the cervix may give rise to ureteral occlusion; likewise complete prolapsus of the uterus is not infrequently productive of a bilateral hydro-ureter, as Halban and Tandler pointed out years ago. It is important, therefore, to bear in mind such possibilities and to determine if possible in our preoperative studies the presence of these ureteral or renal complications, for by so doing we are in a better position to direct appropriate treatment in the prevention or cure of a suppressed renal function.

We now pass to the secretory type of anuria and here we find the causes are varied and the theories advanced as to its etiology are often contradictory. The etiological factors can, however, be classed under four groups: 1, the so-called reflex anuria, in which the suppression of renal function is purely of nervous origin; 2, acute infection of the kidneys; 3, acute nephritis of toxic origin; 4, disturbance in the renal blood supply, either anemia or congestion.

A true reflex anuria is denied by many authorities, but such celebrated urologists as Guyon, Israel, Albarran and Kümmel assert that it may occur. Hammesfahr (Ztschr. of Urol., Leipz., 1920, XIV, 269-275) upholds the plausibility of reflex anuria and cites as an example a case reported by Jenkell of the Brahmann Clinic. In this case a right tuberculous kidney was extirpated after urine taken from the left ureter was found normal. After operation, no urine was secreted, and on the third and fourth days, a catheter was introduced into the left renal pelvis, but no urine was obtained. The patient died on the fifth day without convulsions or pronounced symptoms of uremia. Minute examination of the left kidney failed to reveal modifications which might account for the uremia.

Neuwirt (Zeitsch. of Urol. Chir., 1922, XI, 75-85) likewise regards the phenomenon of reflex anuria as proved and quotes Israel as stating that it occurs in two per cent of the cases. According to this author, Guyon and Kümmel believe that only a kidney which is already more or less diseased is subject to reflex influences from the kidney of the opposite side. Guyon explains this by the fact that a diseased kidney, in order to function, requires a larger supply of blood than normally and assumes that the disturbance in function is due to a deficient blood supply.

According to Neuwirt, this reflex is carried through the splanchnic nerves which supply the vasomotor nerves to the kidney. Division of the splanchnic gives rise to a polyuria, while irritation of the nerve, as would occur from ligation of the pedicle of the opposite kidney, would cause a vasoconstriction, resulting in an oliguria or anuria. A therapy based on this theory was successfully applied by Neuwirt in a case of oliguria associated with acute renal colic due to calculus. Both splanchnic nerves were anesthetized with a solution of novocain—adrenalin. After ten minutes the severe pains began to abate, and in another five minutes they had disappeared entirely. The urine, limited in the previous twenty-four hours to 330 c.c., mounted in the next fourteen hours to 2,255 c.c.

Fruchard-Brin (Gaz. des Hop., Paris, 1921, XCIV, 1029-1035), in enumerating the causes of secretory anuria, stresses the influence of the nervous system on renal secretion, giving as examples the transitory anuria caused by ligation of a single ureter, the arrest of secretion provoked by excitation of the peripheral end of the splanchnic nerve and by anuria caused by electric stimulation of the greater splanchnic nerve. He says that a true reflex anuria may result from an operation on the abdominal organs or more often on some part of the urinary apparatus, but that such an event rarely occurs in a healthy kidney.

Such are a few contributions to the positive evidence of a reflex anuria, but a review of the autopsy findings or clinical reports of cases of anuria soon convinces the reader that in the great majority of cases, a more or less extensive renal pathology is present in the form of acute or chronic inflammatory changes, calculus, hydronephrosis, tuberculosis, et cetera, and that the anuria has resulted because of organic disease, rendering the kidney unable to carry on its work.

While anuria more commonly develops after operation on the urinary organs, it is interesting to note that the condition may complicate abdominal operations such as appendectomy and cholecystectomy. As an example of the former, Evans (Proc. Roy. Soc. Med., Lond., 1913-14, VII, Clin. Sect., 41-44) reports a case of suppression of urine developing four days after an appendectomy. A double nephrotomy was performed and sections of the kidneys showed merely a cloudy swelling, with no evidence of septic inflammation.

The literature on anuria as a complication in hepatic disease and especially as a postoperative complication after surgery of the biliary tract shows that it is rarer than other forms. Clairmont and von Haberer (Mit. a. d. Grenzgeb. d. Med. u. Chir. Jena., 1910, XII, 159-172) cite five personal cases in which such a complication arose and review briefly the clinical and experimental evidence bearing on the subject. Their conclusions coincide with those expressed in a more recent paper by Stäheli (Beitr. f. Clin. Tübingen, 1921, CXXIII, 103-121) that there is without doubt a correlation between the function of the liver and kidney, and that disease of the liver, especially that associated with icterus, is commonly associated with parenchymatous renal changes. Such changes may be induced by the bile acids, bile pigments or by toxic products generated in the body as the result of impaired hepatic function. While the kidneys may be thus impaired, their function is adequate until there is some sudden disturbance on the introduction of a plus factor and the factor may be operation and narcosis, leading to a rapidly developing anuria.

Summarizing the etiological factors productive of postoperative anuria, we can conclude that in the rare instance, suppression of renal function arises as a purely reflex phenomenon. In the majority of cases, however, a definite renal pathology is present, whether as a coexisting lesion or one developing as a postoperative complication. In the former instance, renal function may be little if any affected under ordinary circumstances, but with the added stress of increased work or the effects of anesthesia and the lowered blood pressure incident to operation, factors are introduced which may lead to a complete suppression of renal function.

TREATMENT

If our statement regarding the etiology of postoperative anuria is accepted, it is evident that efforts directed toward the prevention of such a complication are of vital importance. This includes not only a painstaking preoperative study but the adoption of operative and postoperative procedures directed toward maintaining renal function. I think I am correct in stating that the lowered mortality following prostatectomy is due largely to the care modern urologists exercise in determining the renal function before deciding upon the nature of the operative procedure indicated, and the excellent example they have set can well be followed by those in the broader field of general surgery.

Given a case of postoperative anuria, the first requisite is to determine the type with which we have to deal, whether excretory or secretory. Such a decision will be a simple matter ordinarily if the preoperative examination has shown a patulous ureter. When such knowledge is lacking or when the operative procedure was of such a nature that the ureters may have been occluded by ligature or trauma, a cystoscopic examination with ureteral catheterization is indicated. A discussion of the treatment of various types of ureteral occlusion is not in the province of this paper, but it is self-evident that surgical rather than medical measures are usually required.

In the secretory type, particularly in the absence of an acute nephritis, medical measures may be curative and differ in no way from those ordinarily used in uremia. Pepper lays especial emphasis upon the importance of restoring blood pressure to the normal for that individual and with this view we are in full accord. As shown by a few cases reported in the literature, ureteral catheterization with warm saline or adrenalin lavage of the renal pelvis may be of service in stimulating urinary secretion. This may also serve to dislodge plugs of pus or blood and thus reëstablish drainage, as in a case reported by Cabot (Am. Jour. Urol., N. Y., 1915, XI, 89-97).

The question naturally arises as to how long one may give medical measures a trial. This must be decided by the severity of symptoms presented in the individual case, but in reviewing the case records reported, one is impressed with the fact that the anuria has often lasted for several days before operation has been done or death has occurred, hence it would seem justifiable to test the medical treatment for twenty-four to forty-eight hours.

Operation is indicated when conservative measures have failed, and the procedure of choice is nephrotomy with drainage of the pelvis through the nephrotomy opening, with or without decapsulation.

In the acute, fulminating type of renal infection associated with anuria, the course is rapidly progressive from bad to worse. Medical treatment is useless as a rule and an early nephrotomy may be a life-saving measure, serving the double purpose of relieving the enormously increased intrarenal pressure and establishing drainage.

CALCULUS ANURIA*

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Calculus anuria is the discontinuance of the discharge of urine into the bladder produced by the blocking of one or both ureters with calculi—a condition of great seriousness, but fortunately of comparative infrequency. Legueu in 1895 reported an analysis of eighty-six cases. Morris in 1901 presented a critical study of one hundred four cases. Numerous authors have contributed to this important subject.

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The anuria may be entirely due to suppression, but frequently to retention. Retention predicts a much more favorable outlook, since its relief is usually quite promptly recompensed by the resumption of secretion, and furthermore indicates renal secretory activity. True suppression is much more serious (just as in the lower urinary tract obstructions from prostatic growths or stricture are more serious) where such suppression is concerned with a true nephritis or pyelonephritis, rather than a mechanical influence.

The causes of this condition are:

1. The sudden blockage of both ureters with stone.

2. Complete obstruction of one ureter with the opposite kidney not functioning, as a result of

A. Congenital absence, or its removal.

B. Complete destruction by disease, or such crippled function that it is incapable of withstanding the extra load which is suddenly forced upon it.

C. Congenital deficiency, such as infantile kidney, and congenital hydronephrosis.

D. Reflex inhibition, the so-called reno-renal reflex.

The sudden obstruction of the ureter produces a marked engorgement and edema of the kidney with usually a primary retention within its pelvis. Such kidneys are often two or three times their normal size and it can be readily seen that if such a kidney is physiologically disturbed with other antecedent conditions, such as infection or nephritis, serious consequences may ensue.

Most authors are unanimous in the belief that the majority of such anurias are due to mechanical obstructions, or ill kidneys, rather than to reflex inhibition of a normal kidney, although some cases of a definite reno-renal reflex seem to exist. It is, however, difficult to produce a protracted suppression in a normal kidney by hindering the outflow, or in any way disturbing the physiology of its mate. In over 100 dog experiments, in which the ureter was ligated, I did not observe a single case of suppression of urine except for temporary cessation of function. A normal kidney subjected to strain or excitation, such as an increased load from the removal of its mate, or disturbance of its excretory duct will show varying degrees of temporary suppression. We are familiar with the suppression due to anesthesia. McNider has beautifully shown the effect of different anesthetics upon renal elimination, calling particular attention to the effect of alkali balance and blood pressure changes. Unless these disturbances be profound, such kidneys resume their normal elimination.

We are, furthermore, acquainted with the fact that the placing of the ureter catheter in a normal kidney is often productive of a temporary cessation of secretion. Indeed, such a cessation is more liable to occur in a normal kidney than in an abnormal one, but it is always transitory; whereas, in the abnormal organ it is liable to be protracted. In other words, it would seem that continued anuria has, as a more rational explanation, a definite pathological change rather than a physiological phenomenon. Cases have formerly been attributed to renal reflexes because of the negative finding of calculi in the opposite side by means of x-ray examinations. We realize, of course, that such examinations are unreliable since a certain small percentage of stones are invisible by means of the radiogram. It is occasionally clinically difficult to predict the presence of a stone in what is supposed to be the sound, unobstructed kidney. The case which Keyes reports of an elderly gentleman, who had a complete anuria followed by death, who had never given a symptom referable to either kidney, and at autopsy showed one kidney completely atrophied and contracted about a calculus, the other dilated with a stone blocking its outlet, illustrates this feature very forcibly. Silent stones are singularly serious.

Kümmel states that he has never seen a case of true reflex anuria. Keyes, Legueu, Rovsing, Albarran, Casper, Watson and others have doubted the existence of such a condition and believe firmly that the other kidney has been diseased prior to the obstruction of its mate.

On the other hand Guyon, Israel, Marion, Baetzner, Eisendrath and Kelly believe that reflex inhibition can occur with the opposite kidney perfectly normal. I am convinced after a long series of experiments upon animals, and from clinical observation, that such a reflex must be extraordinarily rare. Indeed, I doubt its existence; at least, I have never observed it.

In analyzing my 260 cases of renal and ureteral stones, I find that anuria has occurred six times.

In two cases it was due to a sudden blocking of the normal kidney with stone, the other organ in each instance having been completely destroyed by calculi without suggesting the slightest indication of trouble.

The second group, in which there were two patients, was due to the blockage of a disturbed kidney with stone, the more normal kidney being the seat of acute pyelonephritis with retention.

Another case occurred in a woman who had a single kidney, the other having been unfortunately and unwisely removed for its first infection secondary to its mate, which had carried an old calculus pyelonephritis.

The sixth case concerned the blocking of the left ureter with a small calculus, the right kidney being destroyed by a large congenital hydronephrosis.

It is quite striking to me that I have never observed anuria from the simultaneous blocking of both ureters with stones. This seems to be a frequent cause and a rational one since 20 to 25% of all calculi are bilateral.

Thus in 100 animal experiments of ureteral blockage and 260 clinical cases, I have never observed an instance of reflex anuria.

The duration of complete anuria is at times remarkable. There are cases reported in which such anuria has lasted for twenty-six days. There are numerous instances of a week to ten days.

This is in striking contrast to my experience with ureteral ligation in animals. While there has been no significant effect upon the mate of a kidney whose ureter is blocked, except for slight rise of blood nitrogen, I have, on the other hand, never seen an animal with the two ureters simultaneously ligated, which did not die within four to five days. The kidney in almost 50% of such experiments showed the most extensive extravasation of blood throughout the organ as well as under the true capsule and often out into the fatty capsule with extensive areas of necrosis throughout the organ.

The patient by whom my experimental work on ureteral ligation was stimulated, had gone eight days with complete ureteral block from ligature and had shown not the slightest uremia until the seventh day.

The symptoms of this condition may be classified into three stages: 1, the promontory; 2, the tolerant; 3, the uremic.

The promontory stage is characterized by colic, which may be either a severe typical renal colic, or a slight ache in one or both kidneys. There are instances, however, of complete anuria, such as cases cited in which there have been no symptoms referable to either kidney—a silent block. The colic, which is usually typical, gives the index to the kidney involved and may last from a few hours to a few days and then pass into the second stage, the tolerant stage, the one and only characteristic symptom being anuria. The patient ceases to void urine and the catheter finds an empty bladder, or practically so. At times the anuria runs a remittent course and there may be sudden voiding of a fair amount of urine—a condition creative of false hope both to the surgeon and family, since a repetition of complete anuria is imminent.

Keyes has so aptly described this stage that I shall quote his description: "No more striking contrast could well be imagined than that presented by calculus anuria; on the one hand the grave renal lesion, the absolute retention, the swift fulminating character of the uremic period soon to follow; and, on the other hand, the complete absence of symptoms local or general. The patient seems well, eats and sleeps as usual, the pain has passed and discomforts are insignificant and all the while there is brewing within him a crisis swift and terrible."

This paragraph concisely and exactly describes the condition of my patient in whom both ureters were ligated and of one of the clinical cases. My other five patients have run a somewhat different course. They have all been quite ill from the very beginning of their anuria. They have all had renal infections and this, I take it, has been responsible for their rapid fulminating symptomatology. Infection with its attendant destruction of the secretory elements of the kidney precipitates toxemia and uremia.

It is quite striking how these typical anurics, who are apparently so well, can carry nitrogenous retentions in the blood stream, whereas such retentions under ordinary conditions, if acute, would be productive of immediate uremia. Cases are reported where the nitrogen was over 150 mgms. to the 100 c.c. without uremic manifestations. The cause of this phenomenon is not as yet determined.

The border line between this zone of apparent safety and extreme danger is hard to foresee and the patient may pass from one to the other without signal. The whole scene is then changed and yet the background appears the same.

Treatment: The successful treatment of calculus anuria depends, as in other urological conditions, upon accuracy in diagnosis. The surgeon must, in the first place, determine the location, size and condition of the obstructing calculus by thorough cystoscopic and radiologic study. Exploratory surgery on such patients is even more to be condemned than on the average renal condition. The mere taking of x-ray pictures and finding the unilateral calculus is entirely inadequate since the other kidney may be obstructed by a shadowless stone or silently diseased and completely destroyed, or may be implicated with an acute pyelonephritis with septic retention, the relief of which is paramount for ultimate cure.

Two of our patients illustrate this point most admirably. The stone was blocking one ureter and the products of an acute pyelonephritis completely blocked the other. The kidney blocked by stone in each instance was almost completely destroyed and its removal by surgery would have afforded no assurance of cure, or relief, of anuria. Indeed, in all probability it would have been responsible for mortality. Ureter catheter drainage of both kidneys, particularly the more normal kidney, saved the lives of these patients. In both instances we were fortunate enough to unblock each kidney, relieve the individuals of septic retentions and make surgery to the calculus kidney safe at a later date.

Two other patients with totally destroyed right kidneys and the ureter on the other side blocked by calculus, were extremely ill. One had gone over 48 hours completely anuric and was at this early period showing evidence of a progressively intense uremia with delirium, an enormous abdominal distention, incessant vomiting, and gave evidence very suggestive of an acute peritonitis. His kidney almost completely filled his whole left side, a very enormous retention. X-ray was negative.

A ureter catheter passed into the ureter, blocked about 1" beyond the bladder, finally glided through and drained over 12 oz. of retained urine. The catheter was left in place for several days and the kidney promptly resumed function and within the first 12 hours it secreted 1,200 c.c. of urine. The blood nitrogen which had been 167, within 24 hours dropped to 67, and to normal within the next 24 hours. A small calculus was passed in three days.

The other patient had been anuric for six days. He was quite ill, running high fever from large left kidney retention, but was not uremic. A large stone was found in the pelvic ureter, the ureter catheter passed by and relieved this retention. It was left in place for drainage for several days, being irrigated frequently. Patient promptly responded. Catheter was reinserted several times. When patient's general condition became fit, the calculus was removed by ureterotomy. At a later date his right kidney, which had been destroyed by a calculus pyelonephritis, was removed. Uneventful recovery.

Patient No. 5 had an acutely infected kidney removed without investigation one year previously, in the city of Pittsburgh, Pa. When I saw her there had been complete retention for two days in her only kidney, the outlet being blocked by a wedge-shaped stone with several other large stones in the pelvis. She had become very uremic with high blood nitrogen. We were fortunate enough to relieve the retention with a ureter catheter. She was kept on catheter drainage for several weeks and this apparently dead kidney, which had been the primary seat of infection to its mate, which had unfortunately been removed, improved sufficiently in function to permit a rapid pyelotomy. Recovery.

Another patient, an elderly woman, with a small calculus blocking the lower left ureter, had a large congenital hydronephrosis practically destroying the right kidney. Anuria for three days, patient not uremic. The pain which had ushered in the attack had subsided and her condition seemed quite good. Obstruction relieved by ureter catheter, stone passed later. Right kidney repeatedly drained by ureter catheter. Patient would never submit to its removal.

In these six cases then, we were successful in unblocking the kidney by the ureter catheter. The extreme importance of this procedure cannot be too strongly commended in the treatment of calculus anuria.

The treatment has been classified as expectant and surgical. Such a classification does not seem tenable at the present day. I feel that the two methods are cystoscopic and surgical. In either instance abundant fluids should be given by mouth or skin and the usual elimination and supportive régime should be carried out. It is also wise to employ the ureteral relaxes such as atropin and benzyl benzoate. Expectant treatment surely has no place. While a certain percentage of patients pass the calculus, the mortality is so high that watchful waiting is unjustifiable.

Morris' 48 patients treated by expectant means had a mortality of 79%. The apparent good general condition of the individual should not deceive the surgeon. Faced with anuria, regardless of its duration, the ureter catheter should be immediately tried. If one is successful in unblocking and the stone is small enough for passage, the patient may be manipulated until the stone is dislodged and passed, provided each attempt unblocks the kidney. Should one not be successful in dislodging the stone and relieving the renal retention, surgery should be done early, certainly by the fourth day, regardless of how good the general condition of the patient may be.

In case of a complete impassable block on one side and an infected kidney on the other, attention to drainage of both, especially of the infected kidney, may tide the patient over the anuria, but here one has to be particularly careful.

Large stones which offer no chance of passage and are definitely surgical can be removed immediately if the condition of the patient justifies it. However, under any condition I feel that an attempt should be made to pass the block and relieve the retention by the catheter. If successful, the risk is minimized. If unsuccessful, it is not jeopardized.

Even in early statistics, before our present precise methods of urological therapy were at hand, surgery gave a much better mortality chance than expectant treatment. Morris' statistics show 51% recovery. Recent case reports show a very low mortality rate. I had no mortality in my six cases, although they were extremely ill. It seems reasonable, then, that the following conclusions are manifest:

1. Expectant treatment should have a meager place, if any.
2. With proper cystoscopic manipulations a fair number of stones may be removed and hence anuria completely relieved. In other instances, by such methods, anuria was temporarily relieved, and patients made safer surgical risks.
3. In case of inability successfully and promptly to unblock the obstruction by cystoscopic technique, the surgeon with judgment will not be deceived by the patient's apparently safe condition, but will promptly remove the stone by surgery, its nature depending upon the location and character of the stone, just as in other calculus conditions of the kidney and ureter.

Under such régime, one should expect a very low death rate in calculus anuria.

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SOME THEORETICAL ASPECTS OF THE PROBLEM OF ANURIA*

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Such a symposium as this must have for its object the development of two quite different aspects of the assigned subject: first, to bring out in the essays and the discussions the things we may definitely know concerning the matter—a review of the present status of the subject; second, to suggest for future work and thought the things we do not know.

The practical worker in an applied science is naturally most interested in the actual facts. The research worker is interested primarily in the things we do not know. The experimentalist, however, must know the facts, using them as stepping stones over which he may advance rapidly to the place from which he may dive off into the unknown; but using these stepping stones of fact as vantage points from which he may decide where to make the plunge; keeping on these stones of fact as long as possible, that he may save his strength, and not forgetting to come back to them often, for a rest, and for a new survey of the deeps.

I gather, then, that my function here to-day is to remind you of some of the things we do not know; perhaps to suggest things that we should like you to observe. For all research in medicine starts at the bedside; it may not always look that way, but what we are all trying to do is to help the patient. The problem, therefore, starts with the patient, and will end with the discovered cure of the patient. What is perhaps most needed for the advancement of the science of medicine is more accurate, more thoughtful bedside observation of the patient.

I hear of late years, from the older men of the profession, now and then a timid, halting criticism of the development of the ultra-scientific viewpoint of the younger generation. I agree thoroughly with them in what I think they mean, though not always with what they say. The danger in the modern trend is not in the too great development of the scientific methods of diagnosis, but in the tendency toward the separation of the scientific study from the patient. What I mean is this: blood from an interesting case is taken to the laboratory where it is studied as a specimen, coming from no one cares where into a certain, theoretically interesting collection of bloods—but the patient is forgotten. The tendency is toward the development of statisticians, not of practitioners interested in people.

There is a desire to combat this tendency by placing the clinics and the laboratories in closer physical relationship; but it will not help much to put the patient's bed in the laboratory, nor to put the laboratory in the patient's bed, unless the point of view of the actuary can be changed to the point of view of the doctor. This tendency of modern medicine is not helped by the desire to report large series of cases. Five hundred case reports may not be as good as five properly handled.

All this by way of introducing the first thought I wish to call to your minds. Since all advance in medicine starts from the patient and will eventually return to the patient when the problem shall have been solved, each one of you is in position to do fundamental research work, by more careful, more thoughtful bedside analysis of your patients. And do not feel because you have only one, or only a few cases, you must wait until you have a large series to report. Remember that the western ranchman, carelessly cultivating his thousands of virgin acres, has not added much to the science of agriculture. The European peasant with his few acres of seemingly worn-out soil, produces twice as much wheat per acre!

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It is evident from what we know of the kidney that there are three general groups of anurias: prerenal, that is, a disturbance of some mechanism before the kidney is reached; renal, that is, residing in the kidney itself; and postrenal, that is, a disturbance of the excretory system of the kidney. There are well-recognized examples of each of these groups. The so-called anuria of hysteria, the suppression following the passing of a catheter, are examples of the prerenal group. To be sure, the actual disturbance which results in the failure of kidney function resides in the kidney, but the cause, vasomotor disturbance or central disturbance, lies back of the kidney. There seems to be little known concerning the central regulation of kidney function, and that little concerns hyperfunction. There is no doubt that there is a central control station of water balance, residing in the pituitary or in the immediate neighborhood of the pituitary; and injury to this station results in diabetes insipidus. Kidney function may also be influenced by dietary regulations, as shown in the recent demonstration of the possible control of diabetes insipidus by the withholding of salts and proteins. A very recent article, indeed, shows that the actual size of the kidney can be greatly increased by a protein diet.

A familiar example of renal anuria is the complete failure of the kidney in bichloride poisoning. It would be in this group that a discussion of the value of the Edebohl operation—stripping the capsule of the kidney—is permissible. Into the postrenal group fall the majority of the postoperative anurias and the anuria due to calculi.

But these last two groups do not admit of much theoretical discussion; if the kidney is completely gone from disease, or if the ureters are tied off or blocked, it is like a discussion of the ability to walk of the man whose legs have been disarticulated at the hip. Our lack of knowledge concerning the prerenal group limits the discussion. One problem does remain, however, in all cases of anuria, what is the cause of death?

Just what does the kidney do and how does it do it? It would hardly be worth while to go into a discussion of the details of the theories which have been evolved to explain kidney function, for they still remain theories. We might better await the results of the work now going forward in the laboratory of Dr. Richards at the University, from which it is certain that a clear and definite picture of the mechanism of kidney activity will come.

Let us simply start from the general consideration that the kidney has charge of the excretion of water and of substances for which the body has no further use which are soluble in that water. As a matter of fact, the bowel can do the same thing, as far as water, salts and certain other water-soluble compounds are concerned. What does the kidney do which cannot be done by any other organ? Why cannot an animal live without kidneys? This brings us to the point of practical importance in the discussion of anuria: what is it that kills our patient? It is certainly not the retention of water, nor the salts, nor the urea. There is an unknown, toxic substance which is responsible. And this brings us to the point which has appealed to me as being worth while to present for this discussion: what do we mean by an "anuria"? and when should we diagnose an "anuria"?

The term evidently means a complete absence of urine—but what is urine? We ordinarily think of the word as meaning the water excreted by the kidney, plus the sum of the substances normally found there. If we add to these other substances, as for example, glucose, we still call it urine, even though abnormal. If we suppose the kidney to be withholding something which is ordinarily present, what was left would still be urine, even though deviating from the normal. Now suppose there is something present in the blood stream which only the kidney can excrete, and that it is present in such quantity that the kidney cannot handle it all. It piles up in the blood and finally kills the patient, even while the kidney is excreting a normal amount of all the other urinary constituents. Or, indeed, the kidney may be handling a normal amount of this unknown substance, yet the body is producing too much. The patient dies of a relative failure of the kidney even though that kidney is doing its normal work. Would not this constitute a condition of an "essential" or "specific" anuria?—that is, the failure of the kidney to excrete the specific substance which kills in the condition we ordinarily think of as anuria (complete suppression of all kidney activity).

This thought does no more violence to the King's English than does our present concept of exophthalmic goiter. It is only a few years ago that we refused to make a diagnosis of this condition until one eye at least was hanging out on the cheek. Now we diagnose the condition when there is neither exophthalmos nor goiter present, and still the term exophthalmic goiter is a better term than hyperthyroidism, for no one as yet has proved that the condition is one of hyperfunction; in fact the chances are that we are dealing with a thyroid dysfunction rather than a hyper- or hypofunction.

You may say that such a concept belongs not in a symposium on "anuria," but in a discussion of "uremia." Anuria means no urine; uremia is the sequel of no urinary excretion—the presence of urinary constituents in the blood. The two terms are related very closely in sequence: anuria, inevitably uremia. But the anuria is causal; we must focus our thought on the cause if we would do anything other than symptomatically treat the effect. And further, if we would advance the science of medicine, we must go back to the beginnings of disease, and we must make our diagnoses days, months, years before we do to-day.

Are there any such conditions as those I have in mind? I believe that there are, and that a recognition of the condition might change our ideas of treatment. Severe burns offer a common example of such a condition, and indeed, in severely burned cases we sometimes see a condition of toxemia which finally results in the complete suppression of urine. But the time to treat is not when the complete suppression has taken place, but when the specific anuria began.

Listen to the two following brief case reports picked up from the Surgical Service at the University Hospital, service of Dr. George Müller:

W. J.—Acute appendicitis with abscess. Appendectomy with drainage. Peritonitis. Lived twenty days after operation, voiding an average of over 41 oz. per day. Blood urea nitrogen on the fifteenth day was 99 mg. per 100. No autopsy.

M. R.—Common duct stone and cholelithiasis. Uremia; extra peritoneal hemorrhage. Operation—choledocostomy and cholecystectomy. Lived seventeen days, excreting during the last six days over 38 oz. on average per day [total figures not accurate, owing to loss of urine]. Blood urea nitrogen rose to 159 mg. per 100 c.c. Autopsy—kidney showed secondary degeneration.

The point I would read out of such conditions is that these people died of an "essential" or a "specific" anuria; that the ordinary clinical observation of the amount of urine being excreted would not show any abnormality whatever; the blood urea nitrogen, which should be from 10 to 20 mg. per 100 c.c., shows that there occurs a piling up of something in the blood, and that this something finally kills the patient.

It is my conviction that we will find in our clinical work many cases which fall under this category: severe burns, suppurative conditions, postoperative prostate cases, possibly acute intestinal intoxications, and probably others. In some of these cases the piling up of the unknown toxic substance seems finally to injure the kidney and produce the full-blown picture—complete suppression or anuria, as we have ordinarily thought of it. I should like to raise the point for this discussion: must we not recognize these conditions as "essential" anurias or "specific" anurias, or if you will, "beginning" anurias; and should we not begin to treat them as anurias long before they have developed completely?

DISCUSSION

Dr. Alexander Randall (Philadelphia, Pa.): The problem of anuria is more than a simple condition. Dr. Keene's definition—no urine in the bladder—is a clinical one, and I would prefer that of Dr. Sweet, dividing the anurias into renal and extrarenal, and subdividing the latter into prerenal and postrenal.

The postrenal anurias are nearly all pure mechanical problems of obstruction, typically seen in calculus blockage and also, as Dr. Keen points out, from inflammatory or edematous reaction following operation in the vicinity of the bladder base. I have seen such ureteral obstruction follow cystoscopic fulguration of papillomata, and in acute seminal vesiculitis. The one exception to such mechanical postrenal obstruction is the reflex anuria in unilateral calculus disease, and I join with Dr. Caulk in doubting its actual occurrence, for the proven case (with autopsy) is lacking, and so many supposed cases have been proved to be diseased second kidneys that it is easier to assume the unexplained case as due to overloading of an unsound organ by obstruction in its mate.

The prerenal anurias depend upon alteration in the blood and nervous systems rendering renal activity impossible. Splanchnic irritation or inhibition controls the renal vasomotors and has been taken advantage of by Neuwick, using Kappis' technic as reported by Dr. Keene. The second, and I believe one of the most important causes of anuria, and this a prerenal type, is the question of blood pressure, and I have not heard it more than alluded to. In the normal adult when blood pressure falls below 40 mm. of Hg., renal secretion automatically ceases. I have seen this occur and beautifully illustrated by a patient fainting during cystoscopy and the performance of an indigocarmin test, renal function immediately returning on the reëstablishment of the radial pulse.

This fall of blood pressure is undoubtedly the most important factor as concerns the anuria of surgical shock, and in certain individuals with kidneys accustomed to a high blood pressure this limit of 40 mm. of Hg. may be considerably higher. In urological work we have long known the danger of sudden emptying of the distended bladder and are accustomed to speak of decompression anuria and hematuria. Recently O'Connor has beautifully shown that this decompression is associated with marked and sudden fall of blood pressure and the condition is worthy of fuller appreciation of the necessary and essential force that must be behind renal activity.

Then comes the third and most difficult and interesting group of true renal anurias. It has long been known that decapsulation has ended severe cases, supposedly by relieving tension. Surraco has shown us that pyelotomy will do likewise, thus ruling out tension as the essential cause, and we have just heard of cases where catheterization alone has ended a period of unobstructed anuria. The only possible answer in the light of our present day knowledge is that these are cases of true reflex anuria and such manipulations have broken down the reflex inhibitions. It certainly cannot be what Dr. Sweet theorizes on as due to some unknown retained product. I cannot feel that we are travelling in the right direction by theorizing and complicating the problem. Complicated as kidney function is in its finer handling of excretory salts it is nevertheless fundamentally based on the simplest hydraulic rules, and I feel a complete breakdown of such a system is more likely due here, as elsewhere, to radical faults in some of these fundamental principles. Bearing me out on this are Dr. Keene's statements as regards the prevention of postoperative anuria: First of all, know your renal function; second, support your patient from shock and concomitant low blood pressure, and third, give the kidneys the best diuretic in nature's pharmacopeia—water.

It is of interest, in closing, to call your attention to the work of Heitz-Boyer on the concentrating power of the kidney, so little appreciated. He has shown that in disease this power is decreased and kidneys that heretofore could secrete the required products of metabolism in the normal urine output now need double or treble that amount because of deficient concentrating power in urine production, and we are again faced with the important need of greater fluid intake, or as Crile has so aptly said, "Water early; water continuously; water late; water—fresh water always—is a fundamental requirement of restoration and of conservation of the mechanism."

Dr. Theodore Baker (Pittsburgh, Pa.): The subject of reflex anuria has been a moot question for the last twenty years, and perhaps it is not settled yet. However, I think it is one of the pitfalls for the unwary physician.

Dr. Sweet brought out one valuable point, and that is that we should not consider anuria as total suppression of urine only, but also a suppression of function. I should like to cite a case: A woman had had several stones removed from her left kidney, and who was sent in because of a persistent pyuria. We found a small stone in the left kidney. The other kidney was absolutely free from disease and had a phthalein output of 15 per cent in 15 minutes. The diseased kidney showed no phthalein. We tried lavage of the left kidney, and after two weeks the pus had cleared up entirely and the phthalein had increased in the other kidney from 15 per cent to 27 per cent, showing that the healthy kidney was being affected in a reflex manner, so that its function was decreased and its reserve power limited. Probably an immediate nephrectomy would have thrown such a sudden load on the other kidney that the patient would have succumbed. As it was, the kidney was removed successfully.

In regard to calculus anuria, we must bear in mind that 20 per cent of calculi are bilateral. That means that the danger of anuria is always there in 20 per cent of cases. Dr. Caulk mentions the fact that about 2 per cent of his cases of renal calculi had complete anuria, and by careful preliminary treatment he was able to pull them all through; this is a marked contrast to a general mortality of 79 per cent of cases not operated upon.

The early diagnosis is of great importance. As soon as the patient is recognized to have anuria we should look for stones. We know how frequently stones in the ureter or kidney are silent, causing no pain. The patient may suddenly develop anuria without previous pain. The most practical thing is immediate x-ray, and if that is not positive an immediate test of kidneys with a wax-tipped catheter, which will determine, at least, whether the lumen of the ureter is free on each side.

Dr. Henry D. Jump (Philadelphia, Pa.): The problem of anuria comes just as much within the purview of the internist as of the surgeon. We have anuria in purely medical conditions, such as cases of poisoning from bichloride of mercury. The picture of a patient dying of mercury poisoning with anuria and no sign of uremia is extraordinary. We have no remedy which will relieve it. The reference to Edebohl's operation for the relief of anuria or partial suppression, reminds me of one case of mercury poisoning in whom this operation was done. She had passed no urine in 24 hours; both kidneys were stripped but there was no improvement in her condition.

It is the duty of the internist or family physician, just as much as it is of the surgeon, to determine as far as possible, the functional capacity of his patient's kidneys before operation. It is true that postoperative anuria occurs less frequently to-day than formerly, particularly as regards those cases due to kidney inefficiency. This is doubtless due to the reason given by Dr. Keene—that we have now laboratory methods of precision for determining kidney efficiency before operation. The crippled kidneys may be made more efficient by dietetic and medical treatment and the case becomes a less dangerous risk.

We all remember the time when we thought albumin in the urine, or albumin and casts, made the patient a bad risk, but operations of necessity proved sooner or later that such cases need not be bad risks for surgery. There was something else besides the presence of albumin and casts which made the risk. These other things which should be determined are the blood urea and probably also the creatinin. I do not believe we know what is the danger point in the retention of these substances. We know the normal blood urea is 20 milligrams or less. We see in some cases a high figure without symptoms. Dr. Keene has spoken of a case in which there was 167 milligrams, and the patient died; Dr. Caulk cited a case in which the blood urea was about 155, and the patient recovered. What is the danger point? That can only be determined by continued application of blood urea estimations in the service of the surgeon. This is done routinely by some surgeons and there is being got together a mass of information upon which we will probably be able to determine our standards.

The second precautionary measure of value as I see it, is the determination of the excretory power of the kidney by the color tests. But we are not certain what the danger point here is.

Third is the determination of the blood pressure. When the blood pressure is low you naturally would not select an anesthetic that would further reduce it. A surgeon said to me recently that a case looked like a bad risk and he would use spinal anesthesia, but I reminded him that the blood pressure in the man of 70 was 125, and with spinal anesthesia might drop so low that his kidneys would cease to act.

A very important point made by Dr. Caulk, is that expectant treatment in anuria because the patient seems otherwise to be doing well, is not satisfactory. We must not be lulled into inaction by the apparent wellbeing of the patient.

Dr. Benjamin A. Thomas (Philadelphia, Pa.): There seems to be some doubt in the minds of some persons as to what anuria is. It seems to me that if anuria does not mean the complete absence of urine, then I have forgotten my etymology. In this connection it is also important to consider that in the minds of some practitioners there exists confusion as to a correct differentiation between retention and suppression of urine. It would therefore seem wise to distinguish definitely between anuria and suppression. By anuria is understood that condition in which no urine is excreted; by suppression is understood a condition in which the output of urine is partially or completely suppressed; the latter is synonymous with anuria.

Relative to the etiology of suppression of urine, there is one cause, I believe, not mentioned by the essayists, that is not uncommon, and that is trauma, usually of the upper urinary tract. In considering the postoperative causes of suppression I think it is wise to divide them into postanesthetic and postoperative; the latter refers chiefly to destruction and removal of portions of the kidney when that organ is the object of surgical attack; the former refers to the effects of the anesthetic *per se*. Failure of the kidneys to excrete urine is well recognized in certain states of shock and collapse, and it is definitely known to occur in cases where the blood pressure falls below 40 millimeters of mercury.

I agree with Dr. Sweet that it is proper to theorize on a scientific basis, for research on well founded theories has led to important discoveries.

Dr. Judson Daland (Philadelphia, Pa.): I desire to report three observations:

First: That edema of the vesical end of the ureter can produce block and a typical attack of renal colic, due to catheterization of the ureter.

Second: A case of anuria continued for seven days following bichloride poisoning. An Edebohl was done, but the patient died.

Third: In an autopsy upon a patient who died of typhoid fever, the left ureter was completely blocked by a stone. The left kidney was about one-third smaller than normal and the pelvis and calices were dilated. The right kidney was one-third larger than normal. The obstruction of the ureter occurred months or years before death and no history of the attack was obtainable.

Dr. Lawrence Litchfield (Pittsburgh, Pa.): I wish to stress the importance of mechanical investigation of these patients. First and foremost, if there is no urine in the bladder, investigate the urinary tract to the pelves of the kidneys.

Second, if the urinary passages are clear and the kidneys are not functioning, why put salt solution into the blood stream, thereby throwing an extra load on the excretory function of the kidney? I have long felt, and have many times emphasized the fact, as many others have done, that dextrose intravenously is the best diuretic and nothing is introduced to be passed out of the system except plain water, the dextrose being burned up in keeping the rest of the machinery going. At Camp Lee we had a case of bichloride poisoning that was kept alive with dextrose solution. I expect the medical officers got tired pumping in the dextrose, because they thought it was not worth while, as the patient's record was very bad, and after three weeks they let up on the dextrose and the patient died.

Dr. Thomas G. Simonton (Pittsburgh, Pa.): From the internist's standpoint we are trying to educate the doctors of Pennsylvania to try, if possible, to reduce this mortality rate. The trouble is that the medical men and internists wait too long to call in the surgeon and the G.-U. man. Dr. Keene emphasized the fact that after forty-eight hours we should seek surgical interference, and Dr. Caulk and Dr. Sweet stressed the same thing. If you will only take home this thought—do not wait longer than forty-eight hours before you seek surgical intervention, something will have been gained. That is the dangerous period when the patient goes into the silent stage where there are no symptoms, and if you go past that period you will reach the stage where the patient will probably soon go into uremia.

In twenty-three years I have had two cases of anuria. The first one puzzled me thoroughly. A large fibroid had been removed. The question of ligation of the ureters came up. When the anuria persisted, she was taken to the operating room and given an anesthetic, and they found patulous ureters. She died on the fourteenth day. There was no autopsy.

The second case was the wife of a doctor who had had a tooth extracted under local anesthesia. In twenty-four hours there was complete anuria, although the tests showed that the blood urea and the blood sugar and blood pressure were normal. She was in the silent period, but the husband would not have anything done surgically, until the twelfth day. An x-ray was taken of the kidneys, but no stones found. The patient died the fourteenth day. Both kidneys were found to be cystic.

Dr. Donald Guthrie (Sayre, Pa.): I remember a case years ago of a man who had a perinephritic abscess drained on the right side. It was impossible to cystoscope him successfully because of the condition of his bladder. The man returned to the hospital six months later, complaining of continual pain in his right side and severe bladder irritation. Another cystoscopic examination was unsuccessful. The man was in very good condition and it seemed justifiable to cut down upon the affected kidney. It was found to be almost totally destroyed by infection. It was taken for granted that the left kidney must be in good condition because of the man's apparent good physical condition. The right kidney, therefore, was removed. The patient stood the operation well but voided no urine at all for nine days and died in uremic coma. Autopsy revealed that the left kidney had been destroyed years before by infection. This case illustrates the importance of knowing the condition of both kidneys where nephrectomy seems indicated.

The next case of anuria was one following an operation for acute appendicitis in Rochester, Minnesota. The little girl lived in Rochester, and was not sent through the usual channels of the office, but rushed to the hospital for immediate operation. The condition of the child was good until the third day, when complete suppression of urine took place. On investigation it was found that this was one case that had slipped through without an examination of urine. This was many years ago and of course could not happen to-day. At the end of 24 hours Charles Mayo took the child to the operating room and under light ether anesthesia pulled up both kidneys and decapsulated them. Twelve hours after operation the kidneys began to secrete freely and the child made an uneventful recovery.

Dr. John W. Boyce (Pittsburgh, Pa.): Some time ago I was asked to see a woman whose heart had suddenly failed ten days after a minor gynecological operation. We found her pulse rate had been steadily climbing for a week, and we thought we could exclude any cardiac condition. I said to the attending physician that the woman presented a picture of anuria, but he replied that she was excreting abundant quantities of normal urine. I asked the nurse if there was an abundance of urine, and she said yes, but I found it was one-third pus with a settling like sand, and on putting in on a slide we got casts. She died four hours after I saw her, and no autopsy was permitted. Here we have a clinical picture such as we expect in anuria, but which I have never seen except in this one case. I do think the sudden and severe kidney infection must have interfered with the function of the kidneys.

While I look on this case as strong support of Dr. Sweet's theory of a specific substance, I do think the solution of this problem is not in the domain of biochemistry, but of biophysics, because most of these cases do not present any appearance of uremia. They do not resemble toxemia cases.

Dr. Keene (in closing): In closing this discussion, there are only one or two points that I wish to emphasize. I am in full agreement with Dr. Caulk in his statement that a true reflex anuria is an extremely rare condition. When such does develop, it owes its origin to some definite lesion in one or both kidneys. As has been brought out by the various speakers, one should remember postoperative anuria is characterized during the earlier stages by a complete absence of subjective symptoms, the only sign of impending danger being anuria; even the blood picture may present nothing to arouse undue concern. In the presence of anuria, however, we have to deal with an extremely critical condition and one which calls, as a rule, for radical measures rather than a prolongation of medical treatment. I am firmly of the opinion that the cure of postoperative anuria lies chiefly in its prevention, which can usually be accomplished by careful preoperative studies.

Dr. Caulk (in closing): I rise particularly to thank the members of the Society for having invited me to appear at this meeting, and I wish only to stress two points.

First, do not be fooled by the silent period and a good looking patient.

Second, I feel that we should anticipate anuria and uremia. After working up a case for any type of surgery, the kidney function should always be determined, and if it is not sufficient we should anticipate trouble. We have made it a routine for three years that every patient who shows diminished function of the kidneys, where we expect to do surgery, is given quantities of fluids beforehand. In the septic individual we give transfusions of blood. At any rate we try to have their tissues saturated before they go to the operating table, and always endeavor accurately to understand the kidney capacity.

Dr. Sweet (in closing): I cannot claim the honor of having introduced a new theory; it is a fact that there is an unknown toxic substance in normal urine. I am still convinced that you will find cases in which there is a complete suppression of this toxic substance only, with at the same time, normal excretion of all the other urinary constituents, cases which will die just as dead as though there were a suppression of all the urinary constituents.

CHRONIC DUODENAL ILEUS*

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The suggestion by Von Rokitansky[1] that compression of the third part of the duodenum by the superior mesenteric vessels was a cause of *acute gastroduodenal ileus,* brought about further study of this serious condition, which at the present time is fairly easily recognized and usually successfully treated. The experimental work of Whipple,[2] Sweet[3] and Ellis,[4] demonstrating the cause of death in acute intestinal obstruction, by the production of toxic substances in the duodenum, in the presence of stasis, emphasizes the gravity of interference with the normal mechanism of the duodenum. Their results show that the toxin absorbed from the obstructed duodenum causes a rapidly fatal collapse and death in the acute cases and *a definite disturbance in the chronic ones, interfering with the normal physiology of the gastric and duodenal area.*

The significance of retained duodenal contents, as noted by Wilkie,[5] in rapidly fatal cases of perforated duodenal ulcer with an associated chronic duodenal ileus, is quite striking. The case cited by Wilkie[5] came under his observation within a few hours in a condition of profound shock and toxemia, from which he did not rally and died within twelve hours. I will quote the autopsy and his explanation in this case. "There was found a greatly dilated and congested duodenum, which had apparently emptied itself through a relatively small perforation. In such cases the escape into the peritoneal cavity, of a considerable quantity of the toxic content of a partially obstructed duodenum, gives rise to profound symptoms of shock and toxemia which are almost anaphylactic in character and resemble closely the condition which one is accustomed to see in animals with a closed duodenal loop." The recent publications of Kellogg and Kellogg,[6] Wilkie[5] and Barling[7] emphasize the importance of chronic duodenal ileus, as a factor in the causation of very definite symptoms. I would refer the reader to the Kellogg and Kellogg,[6] and Duval and Gattelier[8] articles, for a complete survey of the literature on this subject, with their report of cases.

Etiology: The etiology of obstruction of the duodenum may be considered under three headings according to the anatomical portions into which the duodenum has been divided. In the first portion of the duodenum, we may find a duodenal ulcer which has invaded the peritoneum, with resultant periduodenal adhesions, adhesions between the first and second portions of the duodenum, adhesions between liver and duodenum, or ptosis of stomach with a fixed duodenum.

Obstruction of second portion of duodenum most commonly arises from adhesions from hepatic flexure of colon or from gall-bladder, traversing this portion of duodenum.

We are concerned chiefly, however, with obstruction of the third portion of the duodenum, or of that portion below the ampulla of Vater. In the normal subject, there is a slight constriction of the third portion of the duodenum, at the point where it passes under the superior mesenteric artery. Variations in the insertion of the root of the mesentery to the right or left of the vertebræ and the character of its insertion, be it broad or cordlike, appreciably influence the degree of constriction of the duodenum. At this point in the duodenum we find, if not the inciting cause of chronic duodenal ileus, almost invariably the point of obstruction in the case which gives rise to symptoms. Various explanations have been given for the development of an abnormal constriction of the duodenum in its terminal portion.

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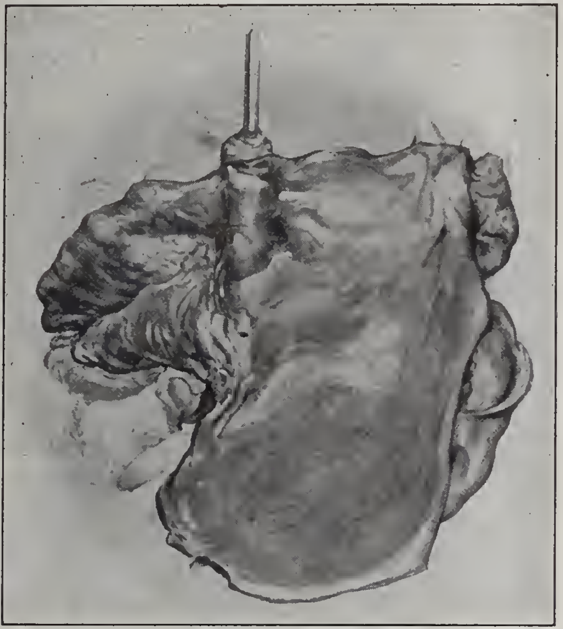

Fig. I. Borrowed from Wilkie's paper[5]. Third part of the duodenum opened and viewed from behind. Probe in superior mesenteric artery. The great dilatation proximal to the probe with a normal caliber beyond is quite evident.

That there may be congenital narrowing of the duodenum at this point, has been shown by Dubose[9] and Downes,[10] who report two cases of megaduodenum in infants. In these cases the dilatation of the duodenum ended abruptly at the crossing of the superior mesenteric vessels.

E. L. Kellogg[11] suggests that the significant factor is the dropping of the hepatic flexure, which causes a straight pull of the distended bowel from the splenic flexure across the point of union of duodenum with jejunum. This may occur without prolapse of cecum. Bloodgood[12] suggests that when the cecum and ascending colon are mobile and dilated, they prolapse into the pelvis. A short mesentery to the terminal ileum prevents it from following the ptosed colon and traction is thus exerted which compresses the duodenum at the point where its terminal portion is crossed by the superior mesenteric vessels. This condition is made worse by accumulation of gas and by stercoral stasis in the proximal colon. Duval and Gattelier[8] suggest that the angle at which the mesentery crosses the duodenum is an important factor. Also that pressure exerted by the middle and right colic branches of the superior mesenteric artery are obstructing bands where there is stasis in the proximal colon.

In patients with visceroptosis from any cause the duodenum may be obstructed in its third portion by pressure of the elongated mesentery which allows the small bowel to prolapse into the pelvis.

Robinson[13] recognized the superior mesenteric vessels as the point of obstruction in chronic duodenal ileus in 1900, and since that time we find other observers in common agreement.

Tumors and inflammations of the pancreas may impinge upon the duodeno-jejunal junction and be responsible for a chronic dilatation of duodenum. A case reported by Dorrance and Deaver[14] is a very striking picture of gigantic duodenum due to kinking at duodeno-jejunal angle.

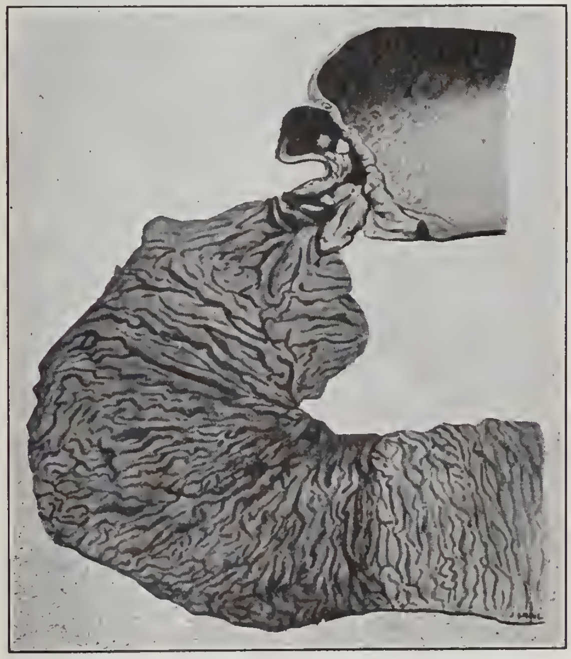

Fig. II. Borrowed from Wilkie's paper[5]. Case of perforated duodenal ulcer with marked dilatation of the duodenum, showing the dilated and congested mucosa up to level of the root of the mesentery.

Path. Anatomy: There is constantly some degree of dilation of the duodenum in these cases. The wall of the duodenum is usually appreciably thickened and somewhat congested, marked in a case reported by Wilkie[5] and shown on slide. Dilatation of the stomach is secondary to the duodenal dilatation and is rather dependent upon the integrity of the pyloric sphincter. In all of the cases we have observed, the pylorus was incompetent and the stomach was dilated.

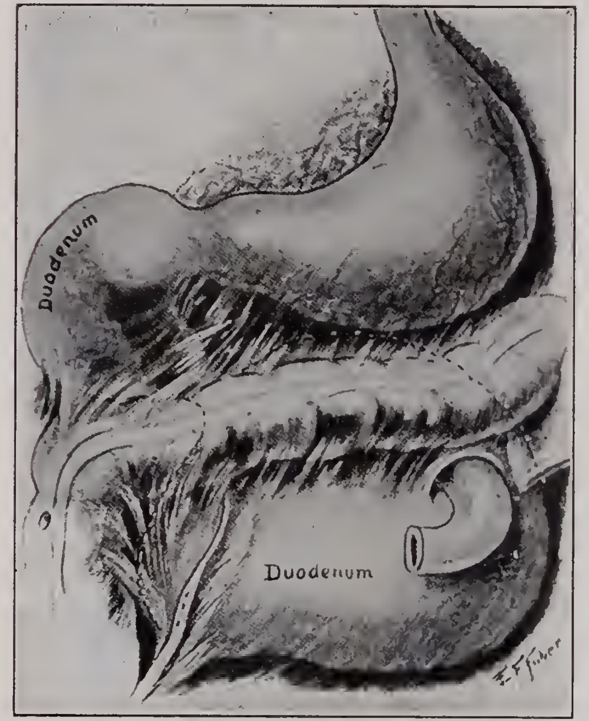

Fig. III. Borrowed from Deaver's paper[14]. Gigantic duodenum due to kinking at duodeno-jejunal junction.

In case IV, this dilatation had increased to the point where the stomach was tense as a drum and conforming to the patient's symptoms, there was intense cardiospasm showing this dilatation had extended to the lower end of esophagus.

Roentgenological examination in case III showed that there had apparently been formed a physiological sphincter in the middle of the cardia so that the portion of the barium meal which proceeded to the lower half of the stomach passed normally into jejunum but that portion proximal to this spasmodic ring was regurgitated. Hyperperistalsis is normally seen in the cases when the pyloric sphincter is intact and the reverse peristalsis, originating at the point of obstruction at the mesenteric vessels is an important factor in overcoming its tonus. Complications which have been reported secondary to chronic duodenal ileus are: duodenal ulcer, which may be considered the result of stasis and secondary infection in duodenum; inflammation of bile and pancreatic ducts and liberation of toxic substances in the obstructed duodenum, interfering with liver function (Werelius[15]) and kidney function (Brown, Eusterman, Rowntree[16]).

Symptomatology: I feel certain that there are a great many people with a moderate degree of duodenal dilation who do not have any symptoms. A compensatory hypertrophy of the duodenum with a competent pylorus protects these individuals until such time that the obstruction becomes more marked and we have the hypertrophy giving way to greater dilatation.

We usually have a thin, distinctly visceroptotic type of female patient from twenty-five to thirty-five years of age, presenting for examination. Two of my patients were men. All complained of vague symptoms, referable particularly to the stomach. Flatulence and a feeling of discomfort after eating not amounting to much pain in any of my cases, regardless of the type of food, were the constant symptoms. Small quantities of food taken often, were more acceptable than the regular three meals a day routine. All of these patients are below their normal weight, have a poor appetite and are constantly in fear of eating anything, knowing that it will be followed by more or less distress.

These symptoms may have been present for a number of years or they may have been present for only a year or so. In addition to the symptoms described, some of these patients have what they call their regular attacks, coming on in one of my cases every three or four weeks. These attacks begin with constipation, epigastric discomfort, nausea and headache, a feeling of fullness in the upper abdomen that becomes almost unbearable, although they do not have much pain. After a day or so, vomiting takes place, first of clear fluid and later of dark colored bile

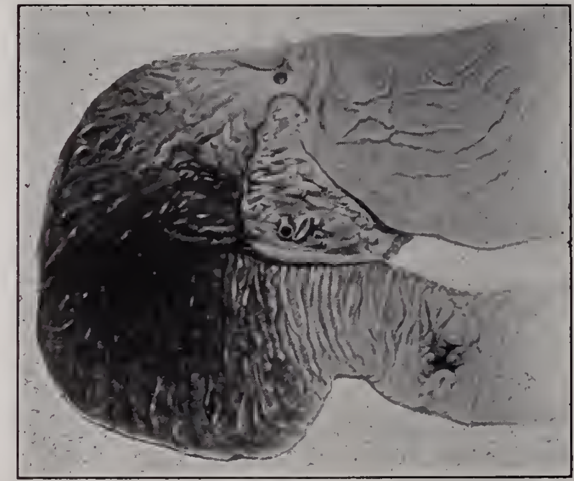

Fig. IV. Borrowed from Wilkie's paper[5]. Duodenal obstruction causing vicious circle after gastro-enterostomy for duodenal ulcer. The opening in the jejunum was the lateral anastomosis for relief of the vicious circle, which failed in its purpose as the opening was two inches beyond the obstruction.

which is followed by almost immediate relief. One of my patients shortened his attack by putting his finger down his throat to induce vomiting. I had the opportunity of observing this last mentioned case during an attack. He presented a picture of acute gastroduodenal ileus. Considerable relief was obtained by gastric lavage whilst complete relief was obtained only after successful enemata. It was quite evident that a certain amount of retained toxic duodenal content was not removed by the gastric lavage, but required release of the obstruction, before passing on into the jejunum. This was no doubt influenced by the release of the pressure of the enormously dilated stomach. The persistency of the retained duodenal contents was quite striking and it is not unreasonable to infer that it may account for some of the failures in gastro-enterostomy, where we have, in addition to the indications for a gastro-enterostomy, unrecognizable symptoms produced by chronic duodenal dilatation.

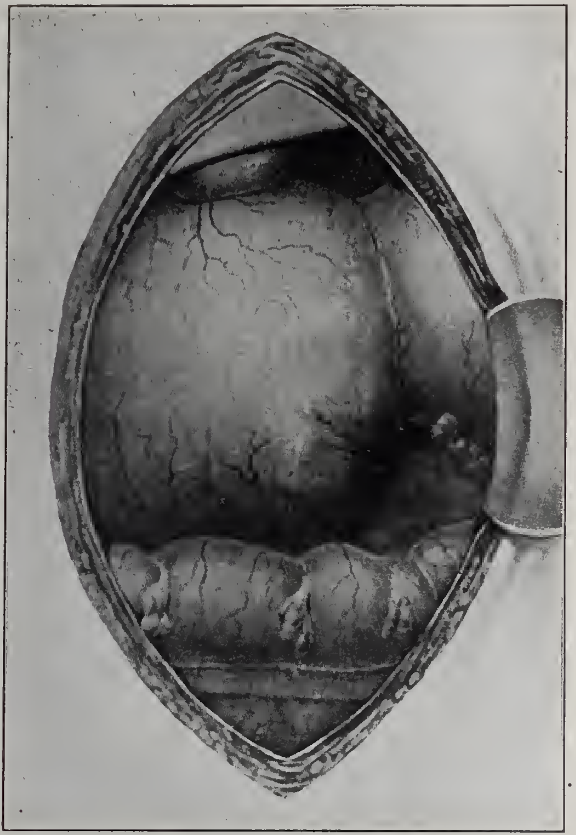

Fig. V. Borrowed from Wilkie's paper[5]. Enormous dilatation of first part of duodenum and pylorus. .

The condition of the pylorus bears an important relation to the symptomatology. In those cases where the pylorus is competent, pain is likely to be much more of a factor and relief is only obtained when the tonic pylorus gives way, which is followed by regurgitation of bile.

REPORT OF CASES: We wish to report the following six cases. I am indebted to my colleague, Dr. G. L. Hays, for the privilege of reporting two of these cases, on both of which he performed duodenojejunostomy. In all six cases there was definite dilatation and thickening of the terminal duodenum and duodenojejunostomy seemed to be the procedure of choice for the relief of the condition present.

CASE I.—Mr. A O., age 27. Referred by Dr. E. M. Ellis.

Previous Medical and Surgical History: Pneumonia five years ago, Colle's fracture two years ago.

Chief Complaint: Pain in epigastrium for the past two years. Pain not associated at all times with eating; at times felt well after meals for several hours, then would have a period when food produced an immediate discomfort which patient describes as too much gas. For past six months patient has vomited many times, and in last month about three times a week, with relief of discomfort, at first stomach contents, then large amounts of bile. The pain associated with this patient's illness has never been very severe but more a feeling of fullness and distress. Has lost thirty pounds.

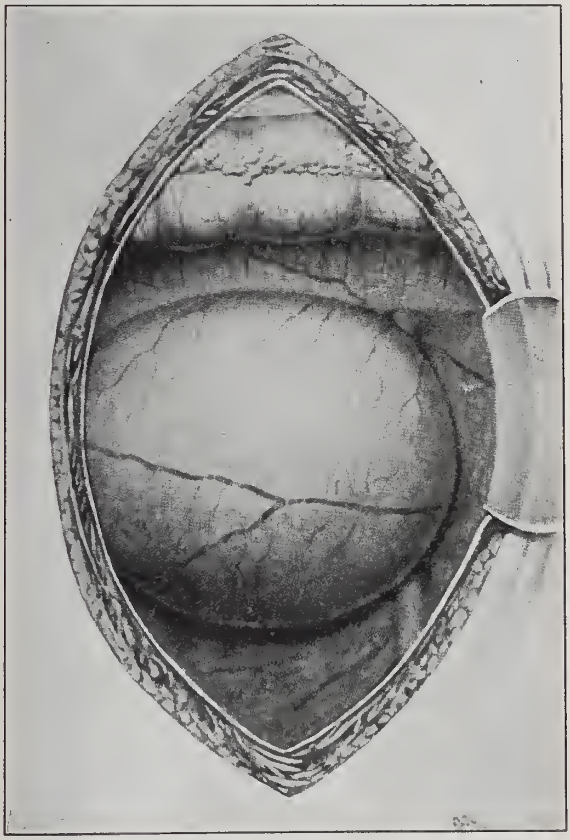

Fig. VI. Borrowed from Wilkie's paper[5]. Dilated third part of the duodenum bulging into wound when transverse colon was elevated.

General Examination: A man of large frame, 6 feet 2 inches tall. Head and neck normal. Heart and lungs normal. Chest, a rather long narrow thoracic cage. Slight tenderness in lower right quadrant. Ewald test—Free H. C. L. 75. Total 110.

X-ray Examination: Barium meal, stomach empty at six hours, duodenal cap normal. Impression—No evidence of pathology in stomach or duodenum.

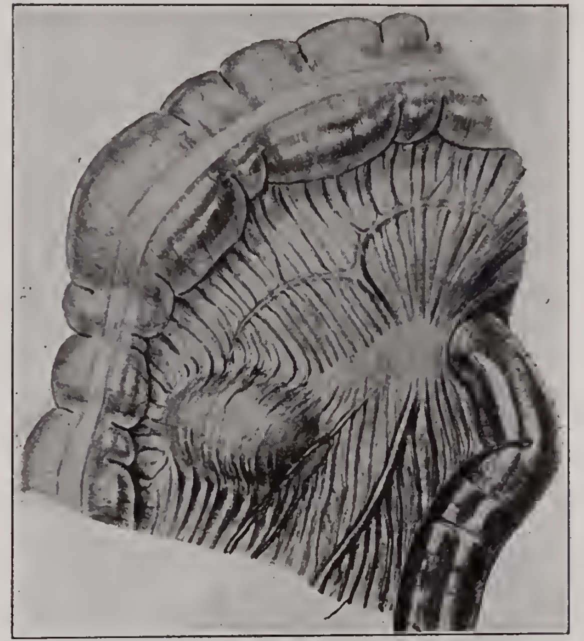

Fig. VII. Borrowed from Kellogg's paper[6]. With the colon elevated the dilated third portion of the duodenum presents as an oval mass close to hepatic flexure of colon.

Operation: May 25, 1922. Gas-ether anesthesia. Right rectus incision. Pathology present. Enormously distended duodenum with walls appreciably thickened; the pylorus at least three inches in diameter. The first part of the duodenum quite tortuous, with dense adhesions to the under surface of the liver. An abrupt termination of the distended duodenum at the crossing of the superior mesenteric vessels. Duodeno-jejunal angle normal. Appendix thickened, retrocecal in location. Duodeno-jejunostomy, appendectomy.

Postoperative Notes: Aside from slight vomiting during first twenty-four hours gastro-intestinal tract gave no concern. Developed an acute bronchitis on the second day with temperature up to 103°F. This condition quieted down within three days. Convalescence from this time uneventful.

Report, June 25, 1922: Is much improved, able to eat regularly three times a day and has gained twenty pounds, continues to have epigastric discomfort at times, particularly noticeable upon several occasions when food was taken before retiring.

Report, January 22, 1923: Has regained former weight and is able to work in coal mine, continues to have an occasional attack of discomfort after eating.

Report, September 1, 1923: Patient states that he is practically free from any abdominal distress, continues to keep his normal weight, has not vomited since leaving hospital.

Case II—Mrs. M. G., age 30. Referred by Dr. E. Zurhorst.

Previous Medical and Surgical History: For sixteen years has had numerous attacks of nausea and vomiting, no pain.

Present Illness: For the past week has been vomiting almost continually, not even water being acceptable to the stomach, patient states that while she has had similar periods for the past sixteen years, they never were so severe, and after a few days she would be able to retain some light form of nourishment. The vomiting is associated with nausea but no pain. Has never noticed any blood in the vomitus or stool.

General Examination: Thin adult female who has evidently lost some weight. Head, ears, eyes, nose and throat normal. Heart and lungs normal. Abdomen—slight discomfort on deep palpation in right center and lower abdomen. Neurologic examination—no organic cause for vomiting found, no increase in intracranial pressure. Blood—R. B. C., 6,300,000. W. B. C., 10,400. Polys. 49, S. 24, L. 20, Eos. 2, Trans. 0. Kidney efficiency—phthalein 65%. Stomach—total acidity 70%, free 40%, comb. 20%.

X-Ray Examination: Fifteen hour meal found in cecum which is limited in mobility. Appendix not seen. Stomach fish hook in type, normal in position, very actively contracting, lower segment is spastic. Barium passes sparsely through the pylorus. Cap is clear cut, slight five-hour retention.

Impression: The spasticity of the lower gastric segment suggests possibility of a pre-pyloric ulcer.

Operation, September 14, 1922. Gas-ether anesthesia. Right rectus incision. Findings: Dilatation of duodenum about three times its normal size. The dependent portion of the duodenum extended two inches below the umbilicus. Duodenum considerably thickened particularly in its dependent portion. A firm band extended from the gall-bladder across the first portion of the duodenum down to the colon. Stomach dilated with a wide open pylorus. There seemed to be an abrupt line at the crossing of the superior mesenteric vessels between the dilated proximal duodenum and the collapsed distal portion. Duodeno-jejunal angle normal with the collapsed jejunum in evidence. Ap-

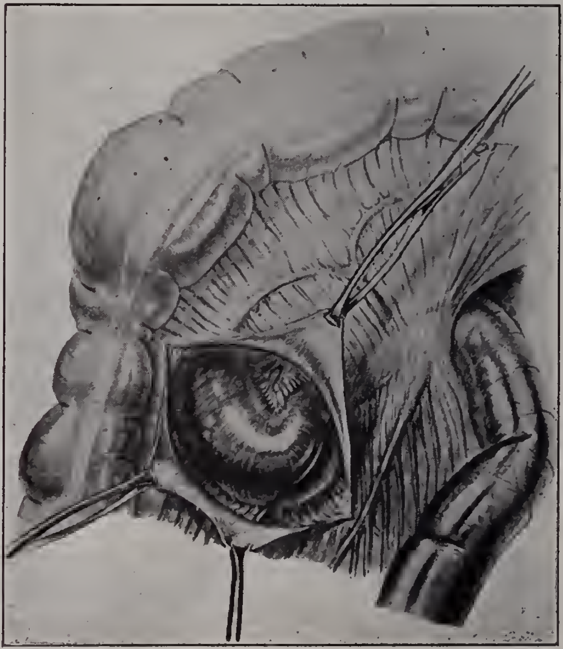

Fig. IX. Borrowed from Kellogg's paper[6]. Duodenojejunostomy. Mobilization of the duodenum. Stitches are placed for closing the peritoneal opening posteriorly, they are passed from without inward so as to invert the raw surface.

pendix thickened and kinked. A moderate degree of general ptosis. Operation: duodenojejunostomy, appendectomy.

Postoperative Notes: Convalescence stormy, considerable vomiting, unable to retain any nourishment by mouth during first week. Very small portions of liquid nourishment retained fairly well at times during the second week. Semi-solid food seemed to regurgitate with very little effort. Examination of stomach by fluoroscopy at this time revealed a spastic condition that seemed to grasp the upper third of stomach, intermittent in character with regurgitation of barium at each contraction. The retention ability of the stomach improved gradually until patient was able to partake of a rather substantial meal. Report, September 2, 1923—gain in weight, thirteen pounds, feeling better, is able to perform her daily duties. Patient claims that she feels better when she takes only two meals a day, morning and evening.

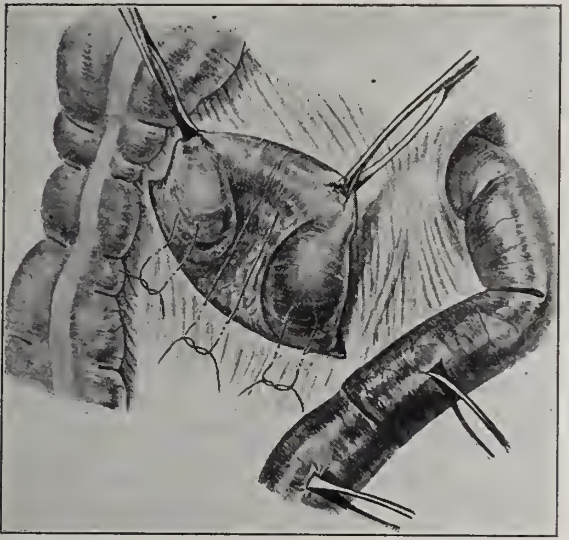

Fig. VIII. Borrowed from Kellogg's paper[6]. Duodenojejunostomy. Exposure of duodenum by an incision in mesocolon. A large blood vessel is seen at the lower angle of the incision that may be injured. Kellogg calls attention to the error in the picture, in that the vessel should be in the peritoneal layer instead of behind it.

Case III.—Mrs. F. K., age 38.

Previous Medical and Surgical History: Has always enjoyed good health until present illness. Mother of four children, all living and well.

Present Illness: Chief complaint—dull pain and gaseous distension in upper abdomen, since her last confinement two years ago. She has felt very weak, poor appetite, distress after eating; has not felt inclined to eat very much owing to distress which was sure to follow. One month ago she had a severe cramp-like pain in the epigastrium and right hypochondrium which radiated to the back. This severe pain lasted at intervals for several days, and has not recurred. Vomiting occurred during this attack, vomitus consisting chiefly of bile. Has had several attacks of nausea and vomiting during past month but very little pain. Is constipated and has lost twenty pounds in past year.

General Examination: Patient is a fairly well developed adult female, who does not appear acutely ill. Head and neck, ears, nose and throat, heart and lungs, normal. Abdomen: Abdominal walls are relaxed, no muscular rigidity, no distension, peristalsis normal. There is slight tenderness on deep palpation in the epigastrium and right hypochondrium. Urine analysis, normal. Phthalein, 85%. Gastric analysis: Ewald, free H. C. L., 20%; total acidity, 50%; comb. H. C. L., 22%; blood, 0%; mucus, 0%.

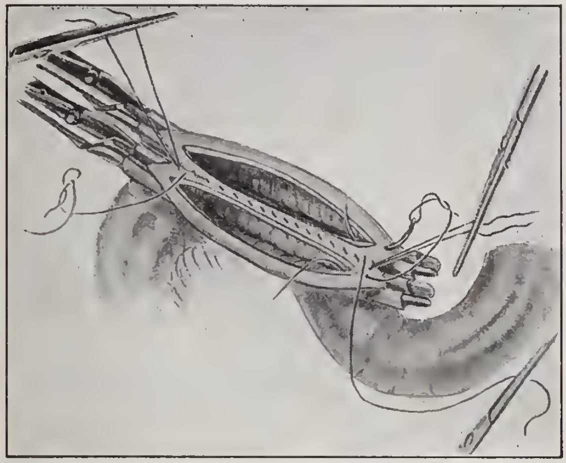

Fig. X. Borrowed from Kellogg's paper[6]. Clamps in position, posterior linen suture inserted; inner suture of chromic catgut started.

X-ray examination of gastro-intestinal tract was not made.

Operation, August 31, 1922. Gas-ether anesthesia. Right rectus incision. Findings: Stomach and duodenum greatly distended, no evidence of gastric or duodenal ulcer. Pylorus wide open at least two and a half inches across. Gall-bladder normal, dependent portion of distended duodenum presenting posterior to the mesocolon the size of a grape fruit. Walls of duodenum thickened. The distension of the duodenum ended abruptly at the site of the superior mesenteric vessels. A moderate degree of general ptosis. Mechanics of operation—duodenojejunostomy; appendectomy.

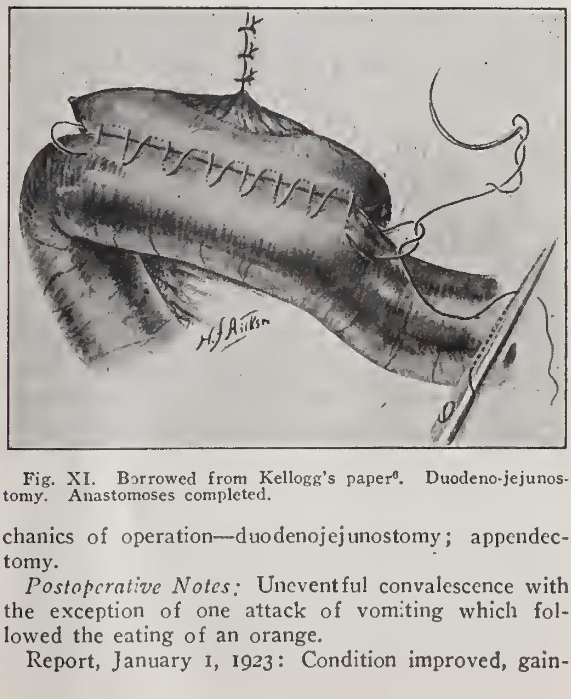

Fig. XI. Borrowed from Kellogg's paper[6]. Duodeno-jejunostomy. Anastomoses completed.

Postoperative Notes: Uneventful convalescence with the exception of one attack of vomiting which followed the eating of an orange.

Report, January 1, 1923: Condition improved, gaining in weight, although has an occasional attack of nausea and distress after eating, no vomiting.

Report, September 1, 1923: Has regained her normal weight and with a little discretion in eating is quite comfortable and able to perform her housework.

Case IV.—Mr. P. R. Age 33.

Previous Medical and Surgical History: Has always been well until onset of present illness.

Present Illness: Began nine months ago with an attack of nausea and vomiting; no pain; feeling of distress and fullness in epigastrium. Present attack began May 2, 1923, with nausea followed by almost continuous vomiting; unable to retain water. At the end of three days, vomitus consisted chiefly of bile, which was followed by prompt relief of symptoms. Has had these attacks about every three weeks during the past nine months. Between attacks patient recuperates and is able to do his work. He continues to have, however, a feeling of fullness after each meal but obtains relief after belching gas and expelling flatus. Each attack is followed by slight jaundice. Is constipated and each attack is preceded by obstinate constipation.

General Examination: Head and neck normal. Eyes prominent, sclera slightly jaundiced. Heart and lungs negative. The general appearance of the patient presented the picture of acute intestinal obstruction; peristalsis over upper abdomen excessive and of the obstructive type. Distention marked in upper abdomen. Slight rigidity and tenderness in upper right quadrant. Temperature normal, pulse eighty-six. Gastric lavage gave temporary relief but final relief was only obtained with effective enemas after numerous ones had been given. Patient recovered quickly from this attack and within twenty-four hours was able to retain liquids and semi-solid food. Three months ago, this patient was admitted for examination after he had recovered from a similar attack. There was nothing found in a general way, with the results of the x-ray examination as follows. March 6, 1923:

The fifteen-hour meal is found in cecum, transverse colon and sigmoid, the former being normally mobile. Appendix is not observed. The stomach is cow-horn in type, normal in position, regular in contour. Barium passes freely through the pylorus, and duodenal cap seems to be of normal proportions. Impression: No lesion of gastro-intestinal tract observed.

Operation, May 31, 1923, after acute attack had subsided. Gas-ether anesthesia Right rectus incision. Findings: The stomach was of an enormous size, monopolizing the upper half of the abdomen; the pylorus was about two inches in diameter and quite thickened. The first and second portions of the duodenum were at least two and a half inches in diameter. The dependent portion of the duodenum protruded from its retroperitoneal position to such an extent, after elevating the transverse colon and omentum that it was on a level with my abdominal incision. There was an abrupt termination of the enormously dilated and thickened duodenum at the site of the crossing of the superior mesenteric vessels. The jejunum was collapsed and there was no apparent abnormality at the duodenojejunal angle. There was a slight degree of general ptosis; appendix was thickened but no adhesions. Gall-bladder was thin, long and collapsible with some flimsy adhesions between the ampulla of gall-bladder and the hepatic flexure of the colon. Pancreas apparently normal. Mechanics of operation: Duodenojejunostomy. Appendectomy.

Postoperative Notes: Patient was treated as an ordinary laparotomy; had very little discomfort after the first twenty-four hours. Discharged from the hospital June 20, 1923.

Report, September 1, 1923: Has had several attacks of nausea and vomiting since leaving hospital. Have not been quite so severe as before operation. The last attack was preceded by eating before going to bed. Has gained some of his former weight.

I am not satisfied with the progress of this case as compared to the others and will keep him under close observation for a possible future report.

Case V.—Mrs. A. O., age 51. Referred by Dr. J. A. Lichty.

Previous Medical and Surgical History: Typhoid at fifteen. Pneumonia when two years old.

Family History: Father died of heart trouble, had stomach trouble for years, no history of cancer or tuberculosis.

Chief Complaint: Pain in epigastrium and upper right quadrant radiating to right shoulder for the past two years. Pain is becoming more severe recently and is sharp in character. Pain appears when stomach is empty. Also has considerable nausea. Patient is relieved after taking food, but still has dull, heavy feeling in epigastrium which lasts for several hours. This pain will be absent for two or three days at a time and then return. Has been on a meat-free diet for six months, craves sweets but they make her condition worse. No vomiting.

General Examination: Appearance good. Temperature normal. Weight 105.2. Normal weight, 125. Eyes normal, tongue clean, heart regular—76 Blood pressure 120-80. Lungs negative. Abdomen: Tenderness in gall-bladder area. Right kidney normal. Left kidney palpable.

Operation, January 15, 1923. Gas-ether anesthesia. Right rectus incision. Findings: Duodenum enlarged four or five times its normal size from pylorus to its junction with the ileum. Its walls were normal in thickness. No evidence of gastric or duodenal ulcer. When the transverse colon was elevated the third part of the duodenum was pouched out almost like a small balloon. The enlargement extended to the superior mesenteric vessels. The stomach was normal to inspection and palpation except for a moderate ptosis. Pylorus was competent, gall-bladder normal, no adhesions in this region. A part of the gastrocolic omentum near the duodenum seemed to kink the duodenum. This was evidently due to the greatly enlarged duodenum pulling on the gastrocolic omentum. The appendix was found to be of the obliterated type. No adhesions. Pelvis normal. The etiology of the enlarged duodenum believed to be due to the constricting superior mesenteric vessels. Operation: duodenojejunostomy. When clamps were removed the gas passed on into the jejunum, completely changing the picture found before the opening was made.

Postoperative Notes: March 14, 1923. Dr. J. A. Lichty had a communication from the patient stating that she was feeling fine. May 25, 1923. Four months after operation admitted to hospital again with symptoms of acute intestinal obstruction. The day before admission was at Dr. Lichty's office and reported herself in good condition except that she had slight trouble with gas at times. She had gained twenty pounds in weight and was greatly improved. She ate rather heavily this day, which was followed by nausea and vomiting. This condition subsided inside of twenty-four hours. Communication September 1, 1923. Patient reports she is feeling fine and has regained her normal weight.

X-Ray Report: Slight six-hour residue with indistinct duodenal cap.

Impression: This is suggestive of duodenal lesion.

Case VI.—Miss M. M., age 32. Referred by Dr. J. A. Lichty.

Previous Medical and Surgical History: Appendectomy in 1912. Hemorrhoidectomy in 1920.

Present Illness: For the past six years patient has been troubled with digestive disturbances such as discomfort and pains in epigastrium and belching of gas after meals, discomfort always worse two hours after eating. Appetite was fair but could eat only light food; a heavy or ordinary meal was always followed by belching and discomfort in upper abdomen. She was treated by Dr. Lichty for this condition in November and December, 1920, and was improved for a time. The symptoms appeared again and have been getting progressively worse up to the present time.

General Examination: Patient is an emaciated, pale, white, adult female, thirty-two years of age. Head and neck negative. Lungs and heart negative. Abdomen: slight tenderness on deep palpation over the epigastrium, otherwise negative.

X-Ray Examination: Six hours' residue in stomach amounting to about 20%. Normal duodenal cap. Impression: Some irritative lesion in region of pylorus (Dr. Briggs).

Operation, June 8, 1923. Gas-ether anesthesia. Right rectus incision. Findings: Duodenum greatly distended from the pylorus to the jejunum, three or four times its normal size, the dependent portion of the duodenum pouched out, presenting through the mesocolon like a small balloon, no evidence of ulcer of the stomach or duodenum. Pylorus normal. Gall-bladder thickened and distended; no gall-stones. No adhesions in upper abdomen. Upper abdomen, all organs ptosed, liver four or five inches below the costal margin. Pancreas normal to palpation. Omental adhesions to peritoneal site of former incision, small cyst the size of thumb in right ovary, several small subserous fibroids in uterus. Operation June 8, 1923.

Postoperative Notes: No complications during convalescence. July 27, 1923: Patient states that about two weeks after leaving the hospital she was feeling quite well and able to eat most everything Was compelled to cut down on the meat consumption but was able to take a liberal supply of a mixed diet. September 1, 1923. Patient states that she is in fine condition.

Diagnosis: The similarity of symptoms with other conditions such as ulcer of stomach and duodenum, gall-bladder or appendicular troubles, makes the diagnosis difficult. In those cases that have definite "regular attacks" described in the symptomatology, especially vomiting of bile without pain, we would think of an incompetent pylorus and chronic duodenal stasis.

X-ray examination in most of our cases revealed a moderate retention in the stomach of barium meal at the end of six hours. We were unable to demonstrate a dilated duodenum or duodenal delay.

Quimby[17] has been able to demonstrate duodenal retention by filling the duodenum, pressing upward on the stomach, then rotating the patient to the left. Kellogg[11] states that in obstruction of the entire duodenum a negative report is not infrequent, not only because of the fact that the predisposing cause may not be constantly operating, or that duodenal peristalsis may have been stimulated by a preliminary cathartic, but also that a special technique is often required.

In exploration of the abdomen in search of chronic pathology in gall-bladder, stomach, duodenum or appendix, we have not fulfilled our duty to the patient until the transverse colon has been lifted and the dependent portion of the duodenum examined. When duodenal dilatation is present it is obvious only when it is carefully sought and very often it is the concealed source of trouble when pathology anticipated elsewhere has not been present at time of operation. I am of the opinion that, in a typical case, diagnosis may be made before operation but in a larger percentage of cases the diagnosis will be established after the abdomen has been opened.

Treatment: In early cases temporary improvement and a degree of amelioration of symptoms is obtained by selective diet, postural treatment, and regulation of the bowels. Kellogg[11] suggests daily saline irrigations of the duodenum and increasing their interval as improvement is noted. This plan of treatment is of greatest benefit in the type of cases where there is considerable stasis and enlargement of the proximal colon.

Gastric lavage has been of definite value in the type of case with an incompetent pylorus and considerable distention of the stomach, particularly when the patient is having a crisis, with vomiting of bile. Assuming the prone position is of definite value in releasing the pressure of the mesenteric vessels on the terminal duodenum.

The treatment which brings greatest relief of symptoms and cure of the patient is surgical. To obtain the best result there must be a careful selection of cases with a proper correlation of the symptomatology of the patient with the conditions found in the duodenum at the time of operation. I believe that a large number of unsuccessful results in gastro-enterostomy—which for a time was performed in the absence of definite pathology, particularly when the patient had "stomach trouble" or had vomited bile, and thereby gained an unenviable reputation, which has extended to the common knowledge of the laity—has been due to an improper conception of the pathological physiology present in the chronically obstructed duodenum. Gastro-enterostomy has cured a number of reported cases of dilated duodenum. These were probably cases where the stomach was secondarily involved in the dilating process, which was primary in the duodenum. In these cases the stomach would be drained, and under favorable conditions, in the absence of a "vicious circle," the patient would be relieved. There would remain, however, the primary etiology, idiopathic as it may seem, causing the duodenal dilatation, which is unimproved.

Duodenojejunostomy is the operation for cure of these patients, performed in the third portion of the duodenum, proximal to the crossing of the superior mesenteric vessels. Here is the typically situated point of drainage and relief of pressure from an obstructed duodenum. It is an operation attended with little or no shock and entails no more difficulty in its performance than a lateral anastomosis of bowel situated elsewhere.

Technique of Duodenojejunostomy: The operation consists in making a lateral anastomosis between the first loop of the jejunum and the dilated third part of the duodenum. With the transverse colon elevated, the dilated duodenum presents posterior to the right more or less lateral aspect of the mesocolon. An incision is made in the peritoneum, exposing the duodenum, which is freely mobilized, permitting the application of a clamp. The first loop of the jejunum, or about six or seven inches from the duodenojejunal angle is similarly clamped and brought in contact with the duodenum and anastomoses performed. I have used catgut for the inner suture and linen for the peritoneal coats but I will not hesitate to use catgut throughout in the next case operated.

I feel sure that this mode of surgical treatment will become more general. Successful results will follow the careful selection of cases, and as in other major abdominal operations, indifferent success will attend its promiscuous performance. The best proof of its efficacy that we may offer is the improvement and cure in the cases we have reported.

CONCLUSIONS

1. Chronic duodenal ileus is a definitely established cause of symptoms of local and systemic character.

2. The diagnosis of chronic duodenal ileus is made with difficulty. There are, no doubt, many cases which do not give rise to symptoms.

3. Exploration of the abdomen in search of chronic pathology in gall-bladder, stomach, duodenum or appendix is not complete until the terminal portion of the duodenum is examined.

4. Duodenojejunostomy will cure those cases in which diagnosis of chronic duodenal ileus is definitely established.

5. The most important cause of acute gastromesenteric ileus is probably a preceding chronic duodenal ileus.

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DISCUSSION

Dr. John A. Lichty (Clifton Springs, N. Y.): I am sorry Dr. Griffith had to hurry his paper and especially those lantern slides, because I do not think it is generally recognized, by the internist at least, what the condition of dilatation of the duodenum really is and how it occurs. I am particularly indebted to the surgical profession and to Dr. Griffith, especially, for calling my attention to the method of overcoming this very difficult condition which has puzzled us for a number of years.

About twelve years ago I had a patient, the sister of a physician here in the city, who had the symptoms of peptic ulcer as we thought. A number of doctors had a chance to cure her, but she did not get any better. The chief symptom was nausea and vomiting. When I saw her I thought this was probably a duodenal ulcer case which had not been treated properly. We very soon found out that this was not the case. With further study we found she had duodenal dilatation. We reached this conclusion largely from the fact that she vomited a great deal more material than we thought went into the stomach. She went down East and was seen by a prominent surgeon who did a Finney operation. She was no better and from that time on I rather lost interest in duodenal dilatation, first of all because I could not make the diagnosis and, secondly, because I could not see any way out of it, and it was not until the last year or two Dr. Griffith called my attention to this operation, and since then we have had easy sailing.

The diagnosis of duodenal dilatation is one of the most difficult diagnoses I know. I do not know now how to make the diagnosis, excepting by exclusion. The symptoms are nausea and vomiting and emaciation and weakness. A condition from which you have to differentiate it is peptic ulcer. One case operated by Dr. Griffith presented peptic ulcer symptoms, but was later found to be duodenal ileus. We had definite evidence of peptic ulcer. The diagnosis was made in West Virginia, the x-ray was satisfactory, and the only reason we agreed to treat the patient was that the Doctor tried to treat her at home. We had x-ray findings and we did not see why she did not get well. According to our methods, when we failed medically in a reasonable time, we asked to have the abdomen opened. This is what we found: we found a large duodenum and in addition an adhesion fastened on the anterior surface of the stomach extending to the transverse colon.

The adhesion was lifted from the omentum and broken. We could not find the base of a peptic ulcer. Operation was done as Dr. Griffith described and the patient is well. Any adhesions which will fasten themselves to the duodenum may give the evidence of peptic ulcer in the duodenum.

The other condition to differentiate from is a neurosis. This is the most difficult. In the case that went East, when we could not cure her by treating for peptic ulcer, we abused her by treating her for neurosis. The next condition is toxemia of pregnancy. Some of these patients in which you may think you have dilated duodenum or peptic ulcer, you may find are pregnant. It may occur in cases that you do not suspect pregnancy. For chronic duodenal ileus there is not any treatment other than surgery, and I regret very much that Dr. Griffith did not have more time to show the plates he has, to bring out the mechanical side of this treatment. I have had several cases operated, and they are all doing well. They seem to be well. I feel greatly indebted to Dr. Griffith for this paper.

Dr. Donald Guthrie (Sayre, Pa.): I would ask Dr. Griffith in closing discussion to show these lantern slides again and we will go over them slowly.

Dr. Griffith (in closing): The difficulty encountered in making a diagnosis of chronic duodenal ileus is a real one, and as Dr. Lichty has stated is only accomplished, in most cases, by exclusion. I would again emphasize the importance of conservatism in selecting these cases for duodenojejunostomy, and feel that the best indication is a chronic dilatation with distinct evidence of thickening of the wall of the duodenum. I am also convinced of the importance of investigating the dependent duodenum in cases of chronic ulcer of stomach or duodenum, where in addition to gastrojejunostomy, we may have as definite an indication for relief of duodenal stasis, which cannot be benefited by gastrojejunostomy alone.

THE RELATION OF CARDIOVASCULAR DISEASE TO SYMPTOMS IN THE ABDOMEN*

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The purpose of this paper is to call attention to some rather common experiences in relation to affections of the heart and blood vessels which have occurred in the course of my practice. Though they may be trite, they seem to me of such importance that they merit discussion.

The first is that I find quite a large proportion of patients suffering from cardiovascular disease who describe as their first and leading symptoms those referable to the digestive system. The second is that in the course of a physical examination of a supposed gastro-intestinal case, unless one has always in mind the possibility of a primary cardiovascular disease, he will be very likely to misinterpret the symptoms. And the third is that in the treatment of a patient suffering from cardiovascular disease, unless one appreciates the relation of circulatory disturbances to gastro-intestinal conditions, the so-called specific heart medication may result in miserable failure.

It was no less an authority than Sir William Broadbent who said, "When a patient comes complaining of heart trouble never *omit* to carefully examine the stomach." (The Heart as Affected by the Stomach, Walter Broadbent, British Medical Journal, 1913, Vol. II, page 862.) One might say with equal propriety, "When a patient comes complaining of abdominal trouble never omit to carefully examine the heart." Attention has frequently been called by clinicians to the reflection to the abdomen of symptoms which have their origin in the lungs and pleura, but these occur quite infrequently compared with the symptoms arising from the heart. That there is a commingling of symptoms, sometimes in a confusing way when one or the other of these systems is affected by disease, all will admit. It will be the purpose of this paper to call attention to and to attempt to clarify the relation of affections of the heart to abdominal symptoms.

ANATOMICAL RELATIONS

The anatomical relations of the heart to the liver, stomach, and intestines are responsible in both a direct and an indirect way for the production of these symptoms. In a direct way the embarrassment of the heart on account of endocardial, myocardial, or pericardial disease results early in an enlargement of the liver and the portal vein and its branches. The liver becomes at first slightly enlarged and every organ below the diaphragm becomes congested. There is a consequent disturbance of the secretions of the stomach, pancreas and bowels, and the so-called symptoms of dyspepsia, which will be described later, arise. The distension of the stomach and bowels with gas forces the diaphragm upward and in an indirect way the heart is in return all the more embarrassed. Pressure thus, upon the right ventricle in particular interferes with the filling of that chamber of the heart, and not enough blood passes through the lungs to the left side of the heart for the general circulation. This produces a vicious circle.

The nerve supply of the heart and of the stomach is from the vagus and the sympathetic. This intimate anatomical relation again explains the reflex effect of vagal or sympathetic disturbance of the heart upon the abdominal organs. The secretory, as well as the motor function concerned in the physiology of digestion is thus disturbed direct. In an indirect way the products arising consequently from fermentation and putrefaction may so vitiate the blood stream as to impair materially the nutrition of the heart and interfere with the general circulation. This again produces a vicious circle.

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* Read before the General Meeting of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 3, 1923.

These statements may seem rather commonplace but upon the principles which they contain is based the intimate relation between the cardiovascular and the digestive system.

ABDOMINAL SYMPTOMS

The term "dyspepsia" should be excluded from our medical nomenclature. It is vague, indefinite, and too comprehensive. One of the major symptoms included under this term is included in the term *gas*. When the patient speaks of "gas" he may mean almost any sensation or experience which might be related to an over-indulgence in mince pie, or to a strangulation, or a perforation of the bowel. No other concept is to be expected of him as a layman. On the other hand, the physician is altogether too likely to interpret the symptom of gas in terms of the amount of sodium bicarbonate or of charcoal which it will take to overcome the annoyance. As a physician a great deal more is to be expected of him, because the proper evaluation of the very symptom which the patient tries to describe may lead to the disclosure that it is an early manifestation of a serious heart lesion or possibly an aortitis, or even of angina pectoris, or of a general arteriosclerosis.

Other symptoms are a feeling of fullness in the epigastrium, tenderness over the lower end of the sternum or below the ensiform cartilage, or a slight pain in the upper abdomen. These may appear before any appreciable dyspnea or distress in the chest occur. On account of their relation to meals they are attributed by the patient to an error in diet or to a certain primary disease of the stomach. They are of the greatest significance when any exercise, such as walking immediately after the meals, aggravates the condition. The importance of this is impressed upon me more and more each day. Our present-day attitude and teaching is altogether too much to emphasize particularly the *history* of a case with a supposed abdominal lesion and to minimize the *physical findings*. Our instruments of precision and our technique for the examination of the cardiovascular case have not yet reached that stage of perfection that we can safely disregard a careful evaluation of the symptomatology.

It is of course unnecessary in this discussion to refer to those marked abdominal symptoms, such as enlargement of the liver with marked tenderness, ascites and distention, which characterize an advanced cardiac decompensation, but it is remarkable how often it has been suggested in consultation that a primary carcinoma of the liver or of the stomach might account for the nausea, vomiting of blood, ascites and weakness, when in reality a chronic mitral lesion with a decompensating heart was accountable for all the symptoms. I had the privilege of observing two patients on my service at the Mercy Hospital who had a secondary carcinoma of the liver and who at the same time were suffering from a marked cardiac decompensation. The change of the symptoms and of the contour of the liver which occurred with rest and digitalis were most striking.

CERTAIN ENLARGEMENTS OF THE LIVER

There are certain enlargements of the liver in the cardiovascular case which are devoid of symptoms. I refer to the slight enlargement of the liver which may exist for a shorter or a longer time before the more common symptoms of cardiac decompensation are present or noted. It has no doubt been the experience of all of us to palpate a liver extending just barely below the costal margin from month to month or year to year without being able to interpret with satisfaction the cause of such enlargement. In some cases I have concluded finally that the liver was not enlarged but on account of postural defect it was rotated in such a way that it could be palpated. In others it was probably due to a chronic infection, luetic or otherwise. In some it was associated with a chronic cholangeitis, as was discovered later at operation. But in some, I believe, even though no other symptoms of decompensation could be found, it was due to an early, insidious chronic cardiac decompensation. I came to this conclusion in the several cases because later when symptoms occurred, these patients, with rest in bed and digitalis medication, not only lost their symptoms but the liver was no longer palpable.

The other form of enlargement without symptoms, but which is the source of considerable annoyance to the patient is that characterized as congestive cirrhosis, or the nutmeg liver. This usually becomes a permanent factor after repeated attacks of decompensation. It is annoying to the patient, particularly because he can feel it and the least over-exertion or excess of any kind may make him conscious of the enlargement and tenderness in the epigastrium. It is remarkable how long the chronic heart case may live with such enlargement of the liver with very little if any inconvenience. The well-known pulsating liver needs no discussion.

The effects of constipation and meteorism in the heart case are well-known. In the old myocardial case this is particularly emphasized. The patient becomes restless, his sleep is disturbed, and often he finds from his own experience that a brisk cathartic will insure sleep and rest, and a general relief of his symptoms. From a diagnostic standpoint constipation, especially in the elderly individual usually does not receive the consideration which it deserves.

ABDOMINAL ANGINA

Under the abdominal symptoms of cardiovascular disease must be included the acute pains and accompanying manifestations which arise from arteriosclerosis. The so-called abdominal angina is supposed to be due to spasms in the gastric and mesenteric vessels. Some clinicians attribute many of the obscure painful gastric and intestinal conditions to these spasms. It is well-known that one of the conditions to which the formation of a peptic ulcer is attributed is arteriosclerosis. It is also well known that those patients who are subject to attacks of angina pectoris may have marked abdominal pains. The diagnosis *angina abdominis* is difficult to prove, and in my own work I make the diagnosis only after a most careful analysis of all the symptoms in relation to other more frequent diseases of the abdomen.

In the past year I saw at the Columbia Hospital a patient 47 years of age who had had a very severe pain in the abdomen localized above the umbilicus and to the left of the median line. There was considerable weakness and shock which continued after the patient came to the hospital. She had vomited undigested food and blood. Blood was also found in the stool. A tentative diagnosis of peptic ulcer was made. The patient remained in the hospital only eleven days, and after the acute symptoms had subsided not enough time was given to study the case with x-ray and other laboratory tests. I was not particularly impressed with the condition of the arteries.

On September 19th this patient returned to the hospital with severe pain in the right leg which had come on suddenly and had to be controlled by hypodermics of morphine. Two days before coming to the hospital the toes of the right foot became dark and cyanotic and when I saw her, there was a distinct line of demarcation about one inch back of the base of the toes. The pulse beat of the dorsalis pedis could not be elicited. I was impressed with the stiffness of the radial arteries, an irregular pulse and hypertrophied heart, and concluded that there was likely an embolus in the posterior tibial artery. I am now wondering whether the severe abdominal pain last January, from which the recovery was so prompt and uneventful, may not have been due to a similar condition in the arteries of the wall of the stomach. I am inclined to think that pain in the abdomen may thus be frequently misinterpreted. Intermittent claudication of the stomach has been described by reliable authorities.

It is not intended to speak of the effect of certain digestive disturbances upon cardiovascular disease, though the subject is of vital importance. Probably the greatest fault lies in neglecting to take a rational view of such conditions when deciding upon a course of treatment. The heart is treated, or the stomach is treated almost forgetful of the fact that these two systems belong to one and the same individual who happens to be the patient. The military rule of dividing the enemy and whipping him in detail is not always applicable in the fighting of disease.

CONCLUSIONS BEARING UPON DIAGNOSIS AND TREATMENT

The conclusions arising from this discussion are self evident: Abdominal symptoms should not be interpreted until there is a most searching examination of the cardiovascular system. The physical findings in the examination of the abdomen are not infrequently the evidence of circulatory disturbance

These principles are not only applicable in the making of a diagnosis, but should be considered carefully in the establishment of treatment for cardiovascular disease. The ready application of instruments of precision in diagnosis has lead to mechanical and chemical diagnosis and a too general reliance upon so-called specific medication. Digitalis, for example, no doubt has a specific action on heart muscle, but most cardiac or cardiovascular cases need more than a drug to stimulate the heart. The load must be taken off of the heart, and this sometimes requires the most careful judgment in prescribing a diet and in the exhibition of remedies and measures directed to the portal system and the gastrointestinal system in general. The average medical student and the young physician in his early practice are altogether too prone to overlook these considerations. This is largely due to faulty teaching. He will think he is practicing scientific medicine when he is prescribing digitalis in a dose proportion to body weight in kilos, and very ordinary medicine when he prescribes ten cents worth of sulphate of magnesia, or a soap water enema. And yet sometimes the whole aspect of the cardiac case is changed by some such common procedure. The close relation between cardiovascular conditions and symptoms below the diaphragm also indicates clearly the necessity for a rational application of the ordinary rules in dietetics when treating a patient suffering from disease of the heart.

DISCUSSION

Dr. W. W. G. Maclachlan (Pittsburgh, Pa.): I believe there is a certain type of cardiovascular disease whose symptoms are essentially abdominal, and therefore, for the purpose of discussion one could divide cardiac cases into those with symptoms beginning apparently from abdominal conditions, and those that develop the abdominal conditions later in the course of the disease. My impression is that the first group are more often found in individuals past middle life with a tendency toward myocardial changes rather than endocardial, the individual who is liable to be arteriosclerotic. The patient with aortitis at times may be considered as giving rise to the symptoms that Dr. Lichty calls the abdominal type.

As to the cause of the abdominal manifestation, I believe it is the general impression that the state of the liver is largely responsible. Engorgement of the liver by passive congestion produces enlargement, stretching of the capsule and subsequent discomfort. It is well to know whether this enlargement has come on acutely or whether the process has been a very gradual one. Symptoms are always more manifest and often more severe in the acute enlargement; while, on the other hand, if the process has been slow in developing the indefinite signs of chronic gastric disturbance may be all that are noted. The pain and tenderness of an acutely engorged liver is frequently extremely severe. I believe that although the stomach may also share in the process of chronic passive congestion the usual symptoms complained of are more often due to the same process involving the liver.

As to the care and treatment, if the case improves on rest and digitalis it would indicate that the abdominal signs are on a secondary, mechanical basis. On the other hand, when this result does not come about, and when the liver is still enlarged with apparently a heart's action seemingly returning to the normal, the question arises as to whether there is not, in addition, some organic disease in the liver, such as a cirrhosis secondary to chronic passive congestion or probably more commonly due to lues. The luetic factor may be common to both heart and liver in cases of this type.

We have been much impressed in our medical service in Mercy Hospital, in treating cardiac cases, that a great relief may be obtained by the proper use of enemata to relieve the abdominal distention, particularly so if the enema is given at night. The patients usually sleep so much better. We also see very good therapeutic results from using calomel.

One word in closing with reference to abdominal symptoms due to disease of the vessels, or in other words abdominal angina: Two forms are to be noted. One is associated with arteriosclerosis and is at times extremely difficult to diagnose, particularly if it occurs in a case where lead poisoning may possibly be considered. We have had an experience of this type recently. It is well known that painters are prone to arteriosclerosis, and one therefore has two conditions present, both liable to produce the same signs. The other form of angina occurs in the young and is represented by the development of embolism so commonly associated with subacute bacterial endocarditis.

Dr. James E. Talley (Philadelphia, Pa.): Dr. Lichty has brought up an important subject, as shown by Dr. Cabot, who analyzed 17,000 cases in the Massachusetts General Hospital that were put down under the old nomenclature of dyspepsia. Seventeen per cent were due to cardiovascular disease, and 16¼ per cent to genuine gastro-intestinal disease. From the clinical standpoint, after you have eliminated the gastro-intestinal tract, even in patients with evident arteriosclerosis, it is a good thing to bear in mind that we all slip up on locomotor ataxia once in a while. It is a thing to bear in mind because we occasionally find a gastric crisis before we have the Romberg sign, the eye symptoms, or the loss of knee jerks. When I was an interne they used to say that 90 per cent of locomotor ataxias were luetic. I asked Dr. Burr about it this morning and he said 99.99 per cent were luetic, so the laboratory ought to help out.

Pericarditis may give distinct abdominal symptoms. It may even simulate appendicitis. Perhaps pain due to pericarditis, acute or chronic, occurs more often than we suspect. We all miss it because we depend on the stethoscope alone. I am sorry to see the old auscultation towel disappear. At present I occasionally see two patients in middle life who had pericarditis, one probably infective, the other metabolic. Though it is some years since the original attacks, at times each exhibits epigastric pain which might be attributed to hyperchlorhydria, though in one the gastric analysis does not support it and the other has not had a gastric analysis. The friction is not constant, but can be heard definitely from time to time. Furthermore, in pericarditis, acute or chronic, if the process is limited to the posterior aspect of the heart, we lose the help of the friction in diagnosis any way.

The new interest in coronary thrombosis should keep us alive to the fact that occasionally epigastric pain in such cases is just as severe as the more characteristic pain. Recently I had a patient succumb in twenty-four hours, in whom the pain was markedly epigastric, but little substernal, and none at all in the arms. Again we may have multiple cause for abdominal pain. I remember an old lady who came to me a few years ago with a diagnosis of angina pectoris which appeared most reasonable from her history. One night she had an attack of epigastric pain radiating to the cardiac region, but the next day she was jaundiced. However, this was not the end of the story. Her jaundice cleared up. One night a year or so later she developed acute epigastric pain, auricular fibrillation, acute pulmonary edema, and was dead in less than twelve hours.

There are few more dramatic signs in medicine than the acute progressive dilatation of the heart and engorgement and enlargement of the liver in simple paroxysmal tachycardia in a prolonged attack. This leads to abdominal pain, and the spitting of blood due to coincident pulmonary engorgement may lead the unwary to think that he is dealing with pneumonia. Now that we know more about this variety of tachycardia, the physician who relies for his heart rate upon the apex and not upon the radial pulse, is not apt to fall into the trap.

For many years there has been doubt in our minds as to whether the left hypochondrium is always the silent area that we usually think it. The frequency of perisplenitis and splenic infarcts in the postmortem room should make us less prone to overlook this region in our examinations. In endocarditic, whether acute or recurring, we should make it a practice to examine for enlarged spleen routinely.

Dr. Lichty (in closing): I wish to thank Dr. Maclachlan for the classification he brought out. I had intended to end the paper by speaking of the beneficial effect of recognizing abdominal symptoms in the treatment and care of heart cases. Dr. Alfred Wedd, consulting cardiologist to the Mercy Hospital, and in charge of the heart station there, has frequently called my attention to the beneficial effect, in fact, the life-saving results at times, of a careful consideration of the gastro-intestinal tract, especially in grave heart cases. A simple enema to relieve flatus, or a mild cathartic at the proper time may be very helpful. I believe our tendency is to look too much to the so-called scientific side of the case, and at the same time we overlook the patient. It is for this reason largely that I brought this subject to your attention.

TREATMENT OF PERITONITIS FOLLOWING RUPTURED APPENDIX*

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The proper management of peritonitis following ruptured appendix is a surgical problem, the solution of which has never been, and apparently never will be universally accepted. The diversity of opinions regarding this subject has been most forcibly impressed upon me as evidenced by the replies received through a questionnaire sent to a number of surgeons throughout Pennsylvania. These inquiries were sent to men of wide experience and their replies represent observations made in a large number of cases.

The following questions were asked: "Do you approve of the Ochsner treatment? If not, what treatment do you prefer? What do you consider the indications for operation?" This question was misunderstood by the majority, as it referred to those cases where a waiting policy is adopted and not to appendicitis in general. "What form of drainage do you prefer and how is it placed?"

A summary of the opinions expressed is as follows: Of thirty replies received, twelve approve of the Ochsner treatment and eighteen do not approve of it. Of the eighteen not in favor of the treatment as ordinarily applied, nine reserved its application to those cases which are so desperately ill as to be practically moribund when first seen. One opinion, which expressed the most emphatic objection to its use, said, "The author considers the Ochsner treatment too entirely exploded to be worthy of up-to-date consideration, I never was guilty of practicing it." He has placed, you will observe, the use of the Ochsner treatment in the category of those indictments which require guilty or not guilty for an answer.

Other opinions in opposition to it are quoted as follows: "More lives are lost as the result of its misapplication than have been saved. A false sense of security is given the surgeons who think they know how to use the so-called Ochsner treatment. They lose many cases. I never use the Ochsner treatment because I believe it always better to open up instead of laboring under that false sense of security."

"Yes and No. Yes, if a hospital or good operating facilities and careful attention are not obtainable, together with an experienced surgeon; but in a good hospital, in the hands of a competent surgeon, there can be but one answer to the question of pus under tension anywhere in the body, whether in the brain or in the abdomen, and that is to relieve septic absorption due to tension. I do not mean appendectomy always, but I mean incision and drainage of the gross amount of pus collected at the time, with as little surgical traumatism as possible; get in and get out, and do not break up adhesions. I am a firm believer in the surgeon's right to do as many operations as necessary, to have in the end a living patient, rather than complete an operation at one sitting and jeopardize life."

"I think the only management of gangrenous peritonitis from appendix rupture is immediate operation. As expressed by Murphy, 'Get in and get out quicker,' operate under gas and oxygen if possible, and if the patient is on the table longer than fifteen minutes somebody has bungled. I do not like the Ochsner treatment at all."

"I do not practice the Ochsner treatment. I operate on every case as soon as possible; I never delay operation, no matter how sick the patient is. In the severe cases I sometimes delay twenty-four hours if the symptoms are on the decrease and if peristalsis is active. After trial backward and forward of both methods I feel that no rules can be formulated but that each case must be individualized."

"No—immediate operation, I approve of the Ochsner treatment only with drainage, occasionally, but rarely without. Every patient with a ruptured appendix should be operated upon just as soon as he can be gotten to the hospital, providing the peritonitis has not become too extensive and the patient too septic. It has been our custom to operate on all cases other than those who are moribund, as I believe they have a better chance than if a watchful waiting policy is followed."

"I always operate in cases of this kind unless the patient is in a dying condition and I feel that opening up the abdomen will precipitate death, or unless the rupture has occurred so long before I see the patient that there is every indication that he will recover without drainage. I regard pus in the abdomen in the same way as I regard it in other parts of the body, that is, that it should be evacuated."

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*Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 2, 1923.

"We have used the Ochsner treatment only in the very advanced cases of peritonitis in which operation is contra-indicated on account of extreme weakness or practically moribund condition of the patient."

"Operate at any stage of appendicitis except on a moribund patient. I do not pay any attention to the Ochsner treatment except when the appendix is removed."

"I operate at once unless I think an immediate operation will kill the patient; in the above instance I approve of the Ochsner treatment."

So much for the *Innocent,* now let us hear the pleas of the *Guilty*.

"I certainly approve of the Ochsner treatment. I have a leucocyte and differential count made repeatedly and this information, together with the condition of abdomen from observation and feel, is my procedure in determining when to operate. When the distension of abdomen decreases and abscess appears well walled off, and with a high leucocyte count with a high percentage of polys., I open the abdomen. I do not feel that it is safe before localization."

"As a general rule we treat our cases of ruptured appendix with peritonitis, seen during the third, fourth and fifth days, by the Ochsner treatment. We are guided chiefly by the rate and character of the pulse and expression of the patient as to whether we can hope for improvement in each particular case. We consider indications for operation, slowing down of the pulse, general improvement of the patient and signs of localization. I think we have all made mistakes in very young children by waiting too long, as I can recall a few cases where rupture took place within a thin-walled abscess and the abdomen became flooded with pus. In the young children we operate much earlier than in adults. I do not think Ochsner's plan of treatment should be attempted without having a thorough understanding with the patient's family at the beginning, telling them that there are a certain number of cases die with or without operation and that this particular case may die without operation, if the conservative plan is carried out, but the plan as outlined offers the patient the best chance for recovery."

"If a case under observation with a definite indication of generalized peritonitis, I prefer to delay, if possible, until some evidence of localization has taken place. In many cases, however, the patient comes to the hospital when it is impossible to draw the line; in other words, when the rupture of the appendix coincides with the examination. In such cases, if at operation the appendix is found ruptured, I prefer a rather conservative treatment of the abdomen. Where possible I believe in the Ochsner treatment. Indications for operation are physical signs of localization pointing to a walled off abscess, decrease in the symptoms pointing to a generalized inflammation of the general abdominal cavity."

"I approve of the Ochsner treatment. Operation should always be undertaken if peritonitis is less than twenty-four hours old. If peritonitis is over forty hours old one should always wait for definite signs of localization. After twenty-four hours one should never open the abdomen in the presence of diffusing peritonitis but should open the abdomen between twenty and forty hours if there is not a diffusing peritonitis."

"I do approve of the Ochsner treatment. Immediate operation is indicated in peritonitis from ruptured appendix if seen at the time of, or shortly after rupture, provided the patient's general condition and laboratory findings do not point to the fulminating type. In the latter event or with signs of a general peritonitis, silent belly, the Ochsner treatment is indicated until the patient's general condition, laboratory findings and physical signs and localization appear, and operative interference is indicated."

"I approve of the Ochsner treatment. If peritonitis is diffuse and quite well established, I put my patients on conservative treatment, hoping for a localization. If the peritonitis is recent in development and the patient's condition favorable, that is, pulse below 100 and temperature in keeping, I institute drainage with gentleness. The indications for operation consist of localization of the infection. I usually wait until the patient's pulse reduces to 100 or less and temperature approaches the normal. I do not like to put these cases on the table with a pulse of over 100. I like pulse and temperature to remain under 100 for a few days before operating. The period of waiting varies according to the condition of the patient. In children one should not wait as long as with adults because they develop acidosis quicker."

Other opinions expressed in approval of the Ochsner treatment do not differ materially from the ones quoted above, except in some minor details.

What inferences may be drawn from a consideration of these various opinions? The outstanding one to me is the wide divergence of opinion regarding the treatment of the most common acute abdominal disease which we are called upon to treat, and the question uppermost in our minds is, which form of treatment is preferable as regards the reduction of mortality? The fallibility of comparing statistics, here, must be taken into consideration as we are all aware of the fact that such comparisons are more or less inaccurate owing to various factors, such as the variability in the virulence of infection, the relative resistance of patients, the skill and technic of the surgeon, and other conditions which influence mortality. Then again, opinions may be based solely upon experience with but one method of treatment, according to the teaching received during the training or apprenticeship of the surgeon. The most reliable information relative to the merits of one form of treatment over another, is that which accrues from a trial of both methods and the selection and adoption of the one giving the better results.

It would be interesting to review, ten or fifteen years hence, the opinions of the same surgeons on the same subject. A review of the literature of the last few years by Jobson and Pfieffer is commented on as follows:

"Anyone who believes that the treatment of appendicitis has been standardized even in its main essentials should review the literature of the last few years. It would seem different clinics and different geographical locations have settled down to the established practice with which they are content, though these practices are often diametrically opposed to those in other clinics of equal standing."*

I do not desire to present this paper entirely within quotation marks, although I must admit that a review of the questionnaires has been both interesting and instructive, coming as they do from our local Pennsylvania surgeons.

My own conclusions are as follows: The best solution of this surgical problem would be to educate the general practitioner to diagnose his cases of appendicitis early, and refer them before rupture and resulting peritonitis has developed, and to refrain from the use of purgatives which is so disastrous to these cases. These evils, of course, cannot be eliminated entirely but their correction would go a long way in reducing the number of cases of peritonitis to a minimum. Personally I believe the Ochsner treatment should be reserved for those cases that are desperately ill, as evidenced by a rapid pulse, extreme abdominal distension and cyanosis. Operations undertaken under these circumstances are almost invariably fatal, and occasionally a case may be saved by temporizing and instituting the principles of the Ochsner treatment. If such cases show signs of subsidence of the infection with localization, as evidenced by a slowing of the pulse and improvement in the general condition of the patient, operation is indicated.

There can be no question that the Ochsner treatment in the hands of some surgeons has been extremely valuable. There is one serious objection to it in reference to the general practitioner, particularly those who are in the habit of referring their cases to the surgeon as a last resort, and that is, if we carry on the temporizing plan initiated by them they will feel justified, in future cases, in following this plan to a greater extent than before, with disastrous results.

I believe the chief reasons for the high operative mortality in the presence of general peritonitis are: the use of ether, prolonged and traumatizing operations in attempting to remove the appendix, inadequate drainage and faulty or indifferent postoperative treatment. The choice of anesthetic is certainly of the utmost importance. Gas and oxygen anesthesia or local anesthesia or a combination of both, according to the condition of the patient, should be employed. The operation should be done as rapidly as consistent with safe technic, and unless the appendix is readily accessible no attempt should be made to remove it. In regard to drainage: referring again to the questionnaire, there was very little divergence of opinion, with the exception of one, which was particularly interesting owing to its radical departure from the usual custom. This is as follows: "I favor in nearly every case the immediate opening of the abdomen for appendiceal peritonitis, the removal of the appendix, dry mopping of the peritoneal cavity and closure of the peritoneum without drainage. This, of course, refers to diffuse and general peritonitis and not to cases of localized abscess. We have given up the glass tube and the peritoneal drainage entirely." This opinion was substantiated by reference to a reprint from the *Medical Record* of January, 1911, by Dr. J. J. Buchanan of Pittsburgh, and also a paper on the same subject by Dr. E. P. Buchanan confirming the value of this method. Not having had experience with this treatment, I hesitate to criticize it but can only congratulate the Drs. Buchanan for their temerity and originality in adopting such a radical procedure and the excellent results reported.

There are two points regarding drainage that I wish to emphasize: care should be used in placing drainage in the pelvis so that the tube or tubes are not kinked, thereby interfering with the free exit of pus; and where gauze is placed within the tube it should be removed early, usually in twenty-four hours. If left for a longer period it interferes with drainage and has a tendency to dam up the pus and allow absorption. Mikulicz drains are often helpful to keep the wound open. Postoperative treatment should be carefully followed out: sitting position, continuous hypodermoclysis and proctoclysis, sufficient morphin to relieve pain and induce sleep, hot packs to abdomen, appropriate stimulation, preferably camphor and digitalis, lavage where indicated and blood transfusion where there is extreme depression—in short, the use of every measure at our command, to support the patient's vital processes and assist nature in overcoming the infection.

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*Jobson and Pfeiffer. The Limitations of the Ochsner Treatment in Certain Cases of Suppurative Peritonitis. Annals of Surgery, 1923, Vol. LXXVII, P. 194.

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DISCUSSION

Dr. Walter C. Shaw (Ridgway, Pa.): I want to congratulate Dr. Hardt on his unique presentation of this subject. After listening to the report of these questionnaires I noticed two things upon which they all seem to agree: first, none like to operate upon a moribund patient; second, they all seem to agree that it is safer to operate on a patient that is improving. In these desperately sick patients in which the peritonitis has become general, due to ruptured appendix, I believe that opening the abdomen carefully and quickly, with good drainage, together with the principles of the Ochsner treatment, offers the best hope of cure to these very sick people. I agree with the man who said that "each case must be individualized." In a condition with such varying pathology it is impossible to standardize. The early diagnosis with early operation will do more to cure than the treatment of Ochsner or any other method that we have to-day. The mortality is high in general peritonitis due to ruptured appendix with any treatment.

Dr. Evan W. Meredith (Pittsburgh, Pa.): As appendicitis is such a common disease, a paper of this kind, I think, is very valuable, especially in view of the divergence of opinion that exists in regard to details. I can only give my own experience and say that I am quite in accord with those who believe in immediate operation in any case of peritonitis following appendicitis, except, of course, the ones that are moribund. I can also say that I consider the so-called Ochsner treatment, or the principles of the Ochsner treatment, an adjunct and not a substitute for operation. It was a step in the evolution of treatment of appendicitis, or peritonitis, that brought about the so-called Ochsner treatment. It was a reaction from the frightful mortality that existed from 1898 to 1905. During this period of six or seven years most of the cases were desperately ill and too much surgical trauma was done.

The next point is that operation under these conditions is essentially a drainage operation and should be accomplished with the minimal amount of trauma. It is no place for the bold surgeon in cases of acute peritonitis. We invariably use McBurney's incision. If the appendix is convenient or handy we remove it, with a simple ligature around the base and then a rubber tissue or rubber dam drain inserted into the pelvis. We do not mop out this fluid which is in the pelvis. When tempted to do so I always imagine how I would like a piece of gauze passing over several coils of my intestine. We simply introduce the drain and get out. After operation we use large hot packs to the abdomen, sufficient morphin to induce rest, and fluids introduced in such ways as are convenient, except, of course, by mouth. We do not believe that the position of the patient has anything to do with his recovery and we have long since abandoned the so-called Fowler position and likewise the sitting position. The laws of gravity do not apply in inflammations of the peritoneum. We feel, with this type of operation, that is minimal amount of surgical manipulation and the above outlined after treatment, which is essentially that of Ochsner's, using it as adjunct and not as substitute for operation, that the results in this type of surgery are definitely satisfactory.

Dr. James H. Baldwin (Philadelphia, Pa.): You notice the title of this paper is general peritonitis; it is not appendicitis, it is "General Peritonitis Following Ruptured Appendix," and many of the replies that came in referred to what you would do in acute appendicitis. When you have general peritonitis it has spread far from the appendix. Diffuse peritonitis would be a better term.

All that has been said for and against the Ochsner treatment is perfectly true in certain cases. Individuality is the thing in all these cases—gall-bladder or anything else. You decide when you get in what you are going to do. Although you may have planned two or three possible operations, when you get in, then you decide. That is what the surgeon does. It is the real surgeon who can make that decision when he has the abdomen open and in a few seconds can decide the thing to do in this case—whether it is best to drain, get out, or remove the appendix, or whatever.

Personally, I have had very fair success in these cases. As a sample, I have had five children, all about ten years of age. You know how cases come in groups, you get one and maybe another and another. They may be fractures, or kidneys, or gall-bladders, or appendicitis cases. These came to me during the last month. Every one of them had been purged, not by their doctors, but by their relatives. So don't blame the doctor every time you get a purged patient—only sometimes. The first question I asked was, "Have you taken a purgative?" The reply was "Yes." They were given salts, citrate of magnesia, or pills, or something else. These children were admitted from 48 to 72 to 96 hours after the acute symptoms started. Every one of these I set up in bed and watched for a few days, then operating under light anesthesia, with incision large enough, quickly made, in and out, with a large rubber tube slipped over into the pelvis in the cases where the pelvis was full of pus, the next day slipping out the big tube, over a smaller tube, which was gradually shortened, and the same with cigarette drains in iliac fossa and drainage spaces. And something else I did that has not been mentioned and that may be considered unwise—with every one of these children I emptied a can of ether into the abscess cavity. The appendix was removed in every case and all recovered.

Dr. John J. Buchanan (Pittsburgh, Pa.): I hope I may be pardoned for entering into the discussion again, but I am apparently on the defensive with Dr. Meredith. Now he is not the only person who takes this view. This subject of diffuse and general peritonitis was a dreadful one to me during the period spoken of by one of the gentlemen here—from 1898 or 1899 to 1905, 1906 or 1907. The subject of peritonitis from a ruptured appendix was a dreadful thing, simply because we considered such a case of diffuse peritonitis similar to a case of abscess elsewhere and thought that it must drain. If we have a large abscess in the axilla or elsewhere in the cellular tissue we know that it must drain, and the proper thing is to provide for the exit of pus. It was forgotten that the peritoneum is a membrane of itself, that there is no other membrane in the body like it. It was forgotten that it was an absorbent membrane. It was not then generally appreciated that it was one of man's greatest protectors. Now I call your attention to the fact that the mere naming of peritonitis does not name any particular condition. We may have what may be called diffuse peritonitis involving one-sixth, one-quarter, one-half of the peritoneal surface, and still it is a diffuse peritonitis. It is the general opinion among surgeons to-day that a general peritonitis practically never exists, that there are areas somewhere that are free from infection. If it does exist it is one of the cases that has blue skin, rapid pulse, Hippocratic countenance and all the signs of impending death. That is general peritonitis. The cases usually called general peritonitis are really diffuse peritonitis. We have in that case a ruptured appendix with diffuse inflammation, pea soup or thicker effusion. We may have a few ounces or a quart—a quart is a good deal; a pint is a good deal when you take it out of the peritoneal cavity.

Now, we have another condition which is much worse than that. It is a condition where the diffuse peritonitis has walled itself off into different cavities, where you break up one pus cavity and then another. These are the fatal cases (apart from the general peritonitis) because in some of these cavities you may have a virulent infection which you scatter into new fields.

In those early days, all these cases of diffuse peritonitis were drained. This treatment has been generally endorsed here to-day. I deny that a diffuse peritonitis is a case for drainage. There is no one here whose opinion I respect more than Dr. Meredith's. He is a man of the soundest judgment, but I believe his judgment is wrong when he says that peritonitis is a "drainage disease." I never had any comfort in treating peritonitis until I got rid of this idea.

In diffuse peritonitis, you must, first of all, stop off the source of disease, that is, remove the ruptured appendix. As a rule that is not much of an addition to the operation. Tie it off and drop the stump if you cannot conveniently bury it. Always stop the origin of that peritonitis. In the second place, take out as much as you reasonably can of the discharge. Make an opening large enough to get into the pelvis and mop out the pelvis. Now I am not afraid to do this. It causes practically no irritation. I have had many patients whose cavities I have relieved of many ounces, a pint or two, by dry mopping. Dry mopping is the thing, and not lavage, which scatters the infection. Dr. Meredith says he would not want anyone to handle his intestines in this disease; but he has no hesitation in handling intestines as freely as necessary in every other condition. Mop out what you can and nature will take care of the rest. Close that peritoneum up without peritoneal drainage. What is the result? The peritoneum is the most absorptive organ in the body, and we all know it; nature comes forward and does her part and the next day your patient will be on the road to recovery. But, if you persist in putting in drains—I don't care whether glass, rubber, gauze, or cigarette—while some fluid will run out of them for a short while, in 24 hours you will not have any drainage. But you have done harm, you have left a track for new germs to get in from outside. Now I think Dr. Ochsner will resent the idea of applying his treatment to any case after operation. He uses this only before operation.

With reference to the local abscess, this must always be drained. The peritoneum has been destroyed and the remaining surface will keep on forming pus.

If you get a case of diffuse peritonitis within 48 hours, remove the appendix, close up without drainage, and that patient will in all probability get well. It is rare to see a patient die after he has been operated on within 48 hours of the first pains. It is not always easy, however, to get a true history of when the first pains came. I have applied this principle in very many cases and from the results attained, am sure it is the proper method.

Dr. Charles E. Thomson (Scranton, Pa.): Dr. Buchanan spoke of Dr. Ochsner's resenting the application of his treatment after operation. I think if he were here he would resent this entire discussion on his treatment, and this includes Dr. Hardt's cases. Dr. Ochsner's treatment, as I understand, applies only to that class of patients that Dr. Ochsner believed would surely die if operated upon. That was the first thing. Afterwards he qualified that (and had good reason to) by saying, unless they were operated on by such men as Mayo and Murphy.

Now what are the real conditions? What has happened? You all know that shortly after Ochsner brought out his treatment, Murphy brought out his operative treatment, which has been emphasized over and over again to-day without mentioning Murphy, and that was to go in quickly, remove your gangrenous appendix and get out quickly. Murphy also gave us authority for Dr. Buchanan's treatment of closing the abdomen, when somebody asked him, "Do you try to take out all this pus and exudate?" I remember well his reply. He said, "Oh, no, leave it there, it is good for the patient." Is not that the principle Dr. Buchanan is applying to-day? But I cannot understand his logic in taking out part of it and leaving the rest. That is a bit puzzling to me.

The Ochsner treatment, then, applies only to those cases that the gentlemen to-day want to shirk, the moribund cases that would surely die if they were submitted to any further shock. That was all that he ever intended his treatment for. If there was any chance of their living by surgery Ochsner was the first man to recommend that surgery. Then Murphy came along with his treatment a few years afterward, and instead of having a few men scattered over this country, thousands of surgeons have followed the Murphy treatment and to-day there is very little reason left for Ochsner's treatment, except on principle, and I do not think Dr. Ochsner would resent the great principle that he brought out in his treatment either before or after an operation, viz., complete rest in bed, small doses of morphin, and the withholding of all food by mouth.

Dr. M. Behrend (Philadelphia, Pa.): I have spent several very profitable hours with Dr. Buchanan and his son in their clinic at the Mercy Hospital. I want to learn more on the subject of general peritonitis, where the appendix was removed and the abdomen closed immediately. It was a startling thing to me and I never had nerve enough to do it. We ought to gather courage after hearing a man of Dr Buchanan's type say it ought to be done in a great many more cases than are being done.

It seems to me that this would be a very strong argument for the Ochsner treatment. If these gentlemen can remove the abscess, take out the appendix and close the abdomen it would be similar, to a certain extent, to the closed abdomen of the Ochsner treatment before operation. I was also very glad to hear Dr. Buchanan say that he takes out every appendix. We never leave an appendix, no matter what condition the abdomen is in.

I like to refer to a little controversy with Dr. Deaver—I am sure he does not mind my telling this. He is a great advocate of the Ochsner treatment, while I am not. There is a false sense of security in the Ochsner treatment both for the general practitioner and for the surgeon. I had two patients, one a girl eighteen, another twelve years old, in whom I was not sure that the Ochsner treatment should be used. I wanted a man of authority to find out whether these cases would be applicable; therefore asked Dr. Deaver to see these patients in consultation. The girl eighteen years old was kept at home four or five days, had a silent abdomen and no peristalsis. She was not moribund and I considered her fine for the Ochsner treatment. I called Dr. Deaver and asked his opinion. He said, "Open at once," which I did. The girl died within 24 hours after the operation. A few days later the other case occurred. This young girl was treated two or three days at home for some affection other than appendicitis. Dr. Deaver said, "I would not operate on this case; in this case I would use the Ochsner treatment." As outlined by Dr. Deaver, the child was given the Ochsner treatment, which was adhered to, to the letter of the law. This little girl died. I do not say that she should have been operated on, but I do say that the first case should not have been operated on, for it was a typical case for the Ochsner treatment.

ANEMIA IN INFANTS*

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PITTSBURGH, PA.

The blood of infants presents certain characteristic peculiarities, differing from that of the adult in its morphology and its reaction to pathologic influences. The hemoglobin, although relatively high for a short time after birth, is thereafter relatively low. The number of red blood corpuscles is somewhat higher than in the adult, 5,000,000 or more. In the first weeks of life nucleated red cells are not uncommon, and there is some variation in the size and shape of the cells. The leucocytes vary from ten to fourteen thousand per cubic millemeter and there is a relative lymphocytosis, the proportions being approximately as follows: Small lymphocytes 50% to 70%, large lymphocytes 5% to 15%, neutrophiles 30% to 40%, eosinophiles 1% to 10%.

According to Dunn the diminution in the hemoglobin or red corpuscles which constitutes an anemia may take place in three ways: 1. By mechanical loss from the body. 2. By increased blood destruction. 3. By diminished blood formation.

Ordinary anemias are divided into (1) primary anemia, (2) secondary anemia.

Primary anemia is supposed to be an idiopathic disease of the blood, while secondary anemia is the alteration in the blood as the result of the injurious action of some disease in another organ or from some known etiological factor. Pernicious anemia and chlorosis are the chief types of primary anemia, but are almost unknown in infancy and will not be considered here.

Secondary anemia is the chief type seen in infancy and is the result of the following causes: (Dunn) (1) Developmental—congenital hypoplasia of the bone marrow with diminished blood formation—aplastic anemia. (2) Myelopathic—due to tumor or sclerosis of the bone marrow—diminished blood formation. (3) Mechanical, i. e., due to hemorrhage. (4) Nutritional—These cases may be due to faulty feeding, an insufficient supply of iron in the food, or some chronic functional gastro-intestinal disturbance, or poor hygiene. The frequent association of rickets with anemia comes in here. (5) Toxic—the result of chemical or bacterial toxins or animal parasites—increased blood destruction, such as are seen in acute infectious or chronic suppurative processes or syphilis or tuberculosis.

Whatever the cause, the blood shows a diminution in the hemoglobin and the number of red cells, sometimes moderate, sometimes extreme. Abnormalities of the red cells, variation in size, staining, shape and the presence of nucleated red cells are particularly characteristic of the anemia of infancy. There is the tendency to revert to the fetal type with the presence of macrocytes and megloblasts in severe cases but the presence of these cells has not the same prognostic significance which would be attached to them in an adult. The infant's blood-forming organs apparently throw out imperfectly formed cells due to hurried overproduction in an effort to protect the organism from some injurious influence. Normoblasts and changes in the shape and size of the red cells appear much more frequently and quickly than from the same pathological influence in an adult. Leukocytosis may or may not be present, but usually is in some degree except in the mildest cases. In the severe forms in infancy myelocytes are frequently found.

There is a tendency for the spleen to enlarge, and cases with marked splenic enlargement, diminished red count, nucleated red cells including many megaloblasts, marked changes in size and shape of the red cells, considerable leucocytosis, with some myelocytes, have been designated as Von Jaksch's anemia. There has been considerable discussion as to whether this is a primary or secondary type of anemia. Certainly in some cases there is no discoverable etiological factor.

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*Read before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 2, 1923.

I wish to report two cases of severe anemia occurring in the same family in successive pregnancies.

The family history is negative. They are Greeks. One older child is living and well. The first baby was seen in March, 1920, when five months old. It was a female, breast fed and weighed ten pounds but had a history of vomiting, constipation and failure to gain in weight, and constant fretfulness.

The physical examination was negative except for a peculiar greenish-yellow pallor of the skin, bluish white mucous membranes and a moderate enlargement of the liver and spleen with abdominal distension. The most striking peculiarity was the color of the skin, on account of which a blood examination was made. † The hemoglobin was 32%; red cells 2,630,000; white cells 35,200; color index 0.6. Stained specimen showed marked poikilocytosis, anisocytosis, many nucleated red cells, chiefly normoblasts, many irregular forms of white cells, chiefly lymphocytes, a few myelocytes. No differential count was made. The nucleated red cells were almost as numerous as the leucocytes. A von Pirquet test was negative, urine normal, stool negative for parasites. A Wassermann on the mother was negative. The case was followed for three months, during which there was little improvement except that the spleen decreased in size from three fingers below the costal margin to the costal margin. There were no hemorrhages at any time. The blood picture did not change materially. The baby died when eleven months old in another city and there was no autopsy.

The second baby was seen in March, 1922. It was a female, eight months old, weighed thirteen pounds 5 ounces, had been on condensed milk for two months, breast fed previously, and had been very fretful and constipated. The physical examination showed a marked pallor of the skin, heart and lungs negative, marked distension of the abdomen with the liver palpable two fingers below the costal margin and the spleen palpable three fingers below. The blood count was: 3,420,000 red cells, 30,000 leucocytes, hemoglobin 50%; differential—24% polynuclears, 59% small lymphocytes, 12% large mononuclears, 1% eosinophiles and 1% basophiles, 3% transitionals, marked poikilocytosis, many nucleated red cells. A Wassermann on this baby was negative. She improved but was lost sight of after 2 months.

These cases conform to the type known as von Jaksch's anemia. The appearance of the anemia in the same family in 2 successive children would seem to point to some congenital factor in the etiology. It would appear that the cause of the anemia should be sought in injury of the germplasm, according to Marquard, who reports a similar type of anemia in twins. Herman and Hutchinson emphasize the appearance of this type of anemia in twins. Hutchinson explains it by the fact that the reserve iron supplied by the mother through the placental circulation, and stored up in the liver, is divided so that each twin receives only half the regular amount. This small reserve is exhausted at an early date before the child receives mixed feeding. Even more than the occurrence of this type of anemia in twins would its occurrence in succeeding children from the same mother indicate some congenital defect. The division of the iron supply could not explain these cases, though there might be a deficient iron supply. The physical condition of the mother seemed good; her blood examination was approximately normal. A defective food supply cannot be excluded as a cause, as the babies were seen only after the development of the anemia. But the defective food supply may only bring out the inherited predisposition, thus indirectly causing the anemia.

Conclusions

1. A severe anemia occurring in two children from the same mother would support the theory of a congenital etiological factor in the production of this anemia.
2. Some additional influence, poor food supply, defective hygiene, chronic infection such as syphilis or tuberculosis, may contribute to the development of the anemia in these predisposed cases.

DISCUSSION

Dr. Frank A. Evans (Pittsburgh, Pa.): These cases of anemia in two infants, not twins but born to the same parents and living under similar conditions, are interesting. Dr. Boyd wisely makes no definite statements as to the etiology but mentions the two most common causes—rickets and improper feeding. The occurrence of rickets with anemia is frequently encountered in more than one child of a family because the conditions giving rise to rickets are common to all the children of the family. The same may apply to improper feeding. But in these cases, apparently, neither of these causes for anemia may be definitely incriminated. Some congenital weakness might have been the cause, as suggested, but this certainly cannot be considered more than a suggestion.

In infants with anemia, the type of blood picture found is of no help in determining the nature of the malady as it is in adults. In conditions associated with anemia and having widely different etiological factors, identical blood pictures may be found; and in two cases with the same condition, blood pictures resembling each other not at all may occur. The blood picture of so-called von Jaksch's anemia may be seen not only in patients with anemia for which no cause may be demonstrated, as in the cases reported, but also in those in which the anemia may definitely be shown to be dependent upon rickets, a deficient iron supply in the diet, syphilis, or other infections, or to errors of hygiene. On the other hand, all these conditions, and notably some of those with anemia for which the cause cannot be shown, may have a blood picture showing none of the characteristics of von Jaksch's anemia. What has been said about the blood picture also applies to the enlargement of the liver and spleen. It would seem, therefore, that the term von Jaksch's anemia would better serve us if used only to designate a definite type of blood picture which may be seen in almost any condition in infants giving rise to anemia, rather than that it be thought of as designating a definite clinical entity. Dr. Boyd uses the term to designate only a certain type of blood picture, and while recognizing the special features of it, is not content with this as a diagnosis but searches further for a cause. It seems to me that this attitude is the correct one.

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† I wish to thank Drs. Mabon, Gannon and Sonda for assistance in making the blood examination on these cases.

Dr. Paul Cassidy (Philadelphia, Pa.): I should like to ask what treatment Dr. Boyd followed in his cases. I have seen two very severe anemia cases in the past six months at Misericordia Hospital—one in a boy about seven years old, in which transfusion was done twice, and another in a child of less than two years. Both of these children died and unfortunately we were not able to obtain autopsies.

Dr. William N. Bradley (Philadelphia, Pa.): I have seen secondary anemia in a class of cases which I think it is important to speak of—that of pyelitis. The blood picture in pyelitis shows marked reduction of the red cells, a reduction in the polynuclear cells, and an increased number of lymphocytes. Certain it is that cases of pyelitis which exist for any length of time will produce symptoms of secondary anemia.

Dr. J. Claxton Gittings (Philadelphia, Pa.): Apropos of Dr. Bradley's remarks, Dr. Hand, of the Children's Hospital, this spring had a case of pyelitis with a red count of 900,000, hemoglobin of 15 per cent, and a blood picture which showed practically the morphology of a pernicious anemia. I think most of the anemias in the first year of life are of the secondary type, and we have seen a number of instances this summer of marked renal irritation in conjunction with anemia. Presumably they both depend upon some other toxic agent.

Dr. Boyd (in closing): I did not take up the treatment in these cases; they were both approximately the same. The first baby had a milk formula in addition to the breast, was given beef juice, Fowler's solution by mouth and iron citrate hypodermically. When there was no apparent improvement after several weeks, the use of human blood subcutaneously or intravenously was suggested to the parents, who objected very strenuously and immediately transferred their attentions to another physician. This was the reason the cases could not be followed effectively.

PITTSBURGH ACADEMY OF MEDICINE

ABSTRACTS

OPENING ADDRESS ON THE OCCASION OF THE R. W. STEWART MEMORIAL LECTURE BY CHEVALIER JACKSON

EDWARD B. HECKEL, M.D.

The occasion which brings us together to-night, to honor the memory of one of our founders and which has taken definite form in the R. W. Stewart Memorial Lecture, is an occasion which takes us out of things practical to things more or less sentimental, for it is an occasion of the heart rather than of the mind.

No one ever attained anything unless impelled by a desire for something better. Idealism is an innate human tendency, we idealize everything in which we manifest an interest. The final estimate of all our so-called great men is the result of this idealization, we exaggerate and multiply the virtue which they possessed. As physicians we idealize medicine, or we may speak of the idealism of medicine. Idealism in medicine does not differ from idealism in anything else. It is simply a striving for perfection. We must set a goal to be attained and that goal must be a high one. We cannot always expect to reach the goal but we will be better for having tried.

Of that little group which first met thirty-seven years ago, impelled by high ideals to form a medical association which resulted in the chartering of the Pittsburgh Academy of Medicine three years later in 1890, the outstanding personality was R. W. Stewart—the man whom we honor to-night in our humble way. There is no doubt that Stewart was inspired in this by the personalities of some of his great teachers, such as the elder Flint and Austin Flint, Jr., Lewis A. Sayre, Frederick Dennis, Edward Janeway and a host of others, all of whom stood for everything that was high and idealistic in medicine. We may not long remember the list of individual attainments; they may be forgotten, but the impress of the personality sticks and is not forgotten. Dr. Stewart was impelled by the highest ideals, yet simple and direct. Take for example the object of this Academy as stated by him and incorporated in our charter: "Said corporation is formed for the purpose of promoting the science and art of medicine." Could there be a simpler, more direct or more comprehensive statement?

Dr. Stewart was constantly interested in and a regular attendant of medical meetings. He was always striving for better things, there was a warmth of friendship in his hand shake, there was a ring of sincerity in his speech, and all in all I can sum up what I think, what you think and what everyone who knew him thinks, and what we can say in all sincerity:

> "His life was gentle and the elements
> So mixed in him that nature might stand up
> And say to all the world, This was a man!"

ETHYLENE-OXYGEN ANESTHESIA

JOHN R. McCURDY, M.D.

Research work in the field of anesthesia by physiologists, anesthetists and surgeons during the past ten years has yielded to the medical profession many advances and much improvement in recognized methods. The latest of new developments is in the form of a gas anesthetic agent—ethylene—brought to the attention of the profession early in 1923 by A. B. Luckhardt, Ph.D., M.D., and J. B. Carter, M.S., of Chicago.

Ethylene is a gas of the olefin series of hydrocarbons. It is present in illuminating (coal) gas in the percentage of about 4. It is colorless, burns in air or oxygen with a bright luminous flame and has a peculiar, pungent odor. The odor is its outstanding characteristic and has been variously described as "sulphur," "garlic," "onion," "molasses," "ginger-bread," "acetylene," "calcium carbide." The last mentioned is perhaps the best descriptive term.

Another property of this gas—one which has been overemphasized by the manufacturers—is its explosiveness. Just why we have been warned to the point of alarm about this I am unable to explain—unless it be that the manufacturers may disclaim all responsibility for possible accidents.

Exposure to any flame, cautery or electric spark should be carefully avoided. But there appears to be no danger of serious accident from explosion in ordinary handling of cylinders and administration of the gas for anesthesia. The containers—similar in sizes and construction to those used for nitrous oxid and oxygen—should not be allowed to stand near a radiator, steam pipe or other artificial heat or in direct rays of the sun, because of the ready expansibility of the gas, causing increased cylinder pressure with danger of leakage.

Chemically it is closely allied to acetylene ("ethine"), C_2H_2, and methane or marsh gas CH_4. It may be prepared in different ways. One of the simplest and cheapest (that employed by Luckhardt & Carter) is by "allowing very small quantities of ethyl alcohol to interact slowly with very hot orthophosphoric acid" (sulphuric acid, Kaolin and other substances may be used), "the alcohol losing a molecule of water, thus:

"$C_2H_5OH + H_3PO_4 = C_2H_4 + H_2O$.

"Pure ethylene, therefore, may be considered dehydrated ethyl alcohol." It is marketed in cylinders specially prepared with a wool composition, to prevent spontaneous decomposition and subjected to Interstate Commerce Commission tests.

Its effect on the *central nervous system* is rapid, general depression, causing unconsciousness in less than one minute with a minimum of mental excitement, but with a mental impression of "contentment and well-being" devoid of apprehension of impending danger. Some patients show a subconscious excitement stage similar to that seen frequently under nitrous oxid.

In the *peripheral nervous system* a marked, generalized analgesia appears, apparently long before surgical anesthesia. This exaggerated analgesia is an outstanding characteristic and is earlier and more pronounced than with N_2O-O, ether or chloroform—perhaps than with ethyl chlorid—and facilitates short, minor operations. It may also account in part for the better relaxation of musculature by the more thorough blocking of afferent impulses from the sympathetic and autonomic reflexes, so troublesome in other forms of anesthesia, and from trauma in the operative field.

The gas is nonirritant and easily respirable, the patient evidencing no sensation of choking or smothering or even dislike of the odor, provided the induction is begun slowly with dilute mixture (70 to 80%). There is not the slightest evidence of asphyxia, the respiration continuing regular, easy, quiet and at a rate noticeably slower than under ether, nitrous oxid-oxygen, or ethyl chlorid. Like nitrous-oxid it is quickly and completely eliminated through the lungs.

The pulse rate is never increased above pre-anesthetic normal and in prolonged administration tends to decrease to approximately that of normal sleep. The absence of circulatory (and respiratory) "whip," so common to ether and N_2O-O, is striking. Blood pressures are similar to those of a well regulated N_2O-O anesthesia; slightly elevated during induction and gradually settling down to near the normal level and remaining there. The color of skin, mucous membranes and blood is a bright pink or exaggerated red, especially in the tissues at site of operation.

Ethylene yields *better* relaxation of all muscles than nitrous oxid-oxygen, but not the softness and flaccidity attainable with ether. The addition of ether vapor to ethylene-oxygen gives a very satisfactory anesthesia except in those patients who are inherently resistant to all general anesthetics.

Like other poisonous gases, ethylene may cause death in excessive concentrations. The process is that of respiratory arrest by depression of centers, the heart continuing to beat some minutes after cessation of respiration. Resuscitation by artificial respiration or forced oxygen is always possible. To date, no operative fatalities have been reported. All published evidence shows no postoperative morbidity or mortality. Its after-effects are similar to those of nitrous oxid-oxygen anesthesia: prompt return to full consciousness; little or no nausea; no circulatory, respiratory or mental depression; no injury to kidneys, liver or other organs. The occurrence of postoperative gas pains is much less frequent than with ether. It is administered exactly as N_2O-O, the ethylene cylinder being substituted for the N_2O cylinder on the gas machine, the only difference in technique being the admixture of higher percentages of oxygen (10% to 30%). At present the cost is 50 to 100% higher than nitrous oxid, including a charge for cylinders, and varying according to size of cylinders.

Its advantages over other anesthetics summarized are as follows:

1. Ease of induction and rapidity of recovery. There is no struggling, no sensation of strangling or smothering, no irritation to throat or nose and little if any excitement. Unconsciousness seems to be induced even more quickly than by N_2O.

2. Absence of cyanosis: Color of skin and mucous membranes remains pink or red throughout, unless dosage is forced above 90%.

3. Absence of sweating: The skin remains unusually dry throughout. This is a great advantage to the patient.

4. Absence of respiratory irritation: The breathing is noticeably quiet, even and unexcited, thus saving the patient the ill effects of labored breathing, over-ventilation and acapnia.

5. Pronounced analgesia: This appears early and not only facilitates minor, short operative procedures, but materially minimizes shock by protecting the brain from traumatic impulses and sensitive reflexes.

6. Better relaxation of musculature: This in comparison with nitrous oxid-oxygen anesthesia,

with or without added ether. This advantage is emphasized by the surgeons and anesthetists at Chicago, who have reported over 500 cases embracing all kinds of operations, but experience of several other anesthetists, including the writer, does not entirely corroborate it.

MORBIDITY AND MORTALITY OF ANESTHESIA

J. W. ROBINSON, M.D.

Careful scrutiny of comparative figures apparently shows that complications are being more frequently detected and that the total mortality rate is slowly falling. This latter happy state of affairs seems to be due to the following factors: 1. The large increase in the personnel devoted solely to the administration of anesthetics. 2. The concerted efforts being made for better and more rigid instruction and control of the young anesthetist. 3. The better selection of the anesthetic, or anesthetics in combination, to fit the patient and the operation contemplated, including the use of safer local anesthetics with their wider application, the use of nitrous oxid in combination in *SKILLED* hands, improved judgment and ability with spinal analgesia. 4. Lastly but not least, the earlier reference of patients for operative intervention with the attendant improvement in all the final results.

By far the largest number of postanesthetic disasters are found in the train of the three chief inhalation anesthetics, ether, chloroform and nitrous oxid in combination. For evident reasons ethylene is not considered in this paper. The majority of complications are limited to the bronchopulmonary system, occurring most frequently with ether, less frequently with chloroform, and least with nitrous oxid. They include bronchitis, bronchopneumonia, lobar pneumonia, empyema, pleurisy, abscess or gangrene, embolism with or without infarction. Of the pneumococcus groups, groups I, II and III are not found in normal throats, while group IV is found to be present in about 70% of throats. Investigation shows that from 70% to 94% of the postoperative pneumonias, both types, are associated with the group IV type of pneumococcus, the rest being due to influenza, streptococcus, bacillus mucosus capsulatus, etc.

A careful study of 18,420 recorded cases in which ether was the chief anesthetic, shows a morbidity ranging from 0.5% to 8%, an average of 3.2% and a mortality of .26 or approximately 2 : 1000. Of all complications, the average death rate was 11.3%. Deaths occurring in the septic cases were 3½ times as frequent as those in the so-called clean cases. It is the concensus of opinion that ether, unless *ABUSED*, is not sufficiently irritating to *NORMAL* mucous membrane to cause serious complications; abused, it may run the gamut from bronchial irritation to acute edema of the lungs. Chloroform, while less irritating to the tissues, has a mortality estimated from 1 : 1000 to 1 : 3000 and a morbidity that, from available figures, cannot be computed with satisfactory accuracy. The mortality rate from nitrous oxid in combination, usually with oxygen, is stated as ranging from 1 : 100,000 to 1 : 670. Access to very reliable figures shows a mortality of 1 : 500. Deaths from this anesthetic are occurring more frequently than any published figures would seem to indicate and the belief is spreading that it is not as safe in major surgery as commonly supposed. Postoperative complications from available data occur in 1.6% of cases. Local anesthesia has its morbidity and naturally so since an extremely large number of cases already have pulmonary factors as an indication for this method; the figures range from 1.4 to 3.1%. The mortality figure is practically unknown at present.

Conclusions drawn from this study may be given in a more or less general rule: *"Early* postanesthetic bronchopulmonary complications are due, in the great majority of instances, to the presence of a more or less recent catarrhal affection of the upper air passages; the *late* complications are blood-borne, metastatic, either septic or otherwise, secondary to pathology elsewhere in the body."

Spinal analgesia deaths range from 1 : 1600 to 1 : 5800, the latter from a compilation of 53,698 cases. In a series of about 1,200 cases the writer had no deaths, one bronchopneumonia, and one fright. Incidentally, there are about as many frights per thousand from ether. Postspinal headaches remain about 1 to 4%.

A plea is made for better data on heart and kidney complications and deaths. The toxic thyroid, the chronic gall-bladder, the fibroid uterus, all have notorious years, yet usable figures are few. In a series of 3,448 operative cases, figures known to be reliable, there were 5 deaths from heart, 1 : 689 or .14%. The postoperative anuria and renal insufficiency are anything but rare, yet properly compiled material is lacking. Many of the postoperative cases showing persistent nausea or vomiting with a persistently rapid pulse, without other signs and symptoms indicative of definite localized complications, usually passed by as being nothing in particular, if thoroughly investigated, would be pronounced cases of actual renal insufficiency.

To avoid fatalities one must be apprehensive of complications. Treatment of complications may actually be instituted before their appearance. Keep in mind before, during and after the anesthesia the peculiarities of the average sick man's bronchopulmonary system. During the same period avoid exposure to cold. Use gentleness in handling and proper drainage of septic operative fields. Remember the presence of thrombosis in various veins following operations in 1 to every 100 operations. Fit the anesthetic to the patient. Prevent limiting respiratory movements with tight chest or abdominal dressings and the occurrence of abdominal distension, and relieve the reflex shallow breathing of the high abdominal incision with morphin judiciously. Use morphin, atropin, glucose, cardiac stimulants, etc., as indicated. And best of all, in the serious postoperative complications, call into the case the assistance of a skilled internist.

SPINAL ANESTHESIA

B. Z. CASHMAN, M.D.

Spinal anesthesia is a specialized form of local anesthesia. As compared to local infiltration or paravertebral anesthesia it has certain advantages and disadvantages. Local infiltration anesthesia is very satisfactory in superficial operation but becomes more difficult, more time-consuming and less satisfactory in the deeper surgical procedures such as abdominal surgery. It is only in the deeper and more difficult surgical procedures that spinal anesthesia has any advantages over local infiltration anesthesia. Paravertebral anesthesia, when perfect, accomplishes all that can be accomplished by spinal anesthesia, but it requires much greater skill, much more of the anesthetic, is more time consuming, and because of its difficulties is less reliable than spinal anesthesia. Of the drugs used in local anesthesia certain ones are more toxic than others, and occasionally one encounters a patient who is particularly susceptible to the drug. There are two other potential dangers in spinal anesthesia, namely, the possibility of meningitis and the possibility of diffusion of the drug to the higher centers. With proper technic these accidents must be very rare. With our own technic it is so easy, as we have often found, to get insufficient anesthesia by injecting the solution one interspinous space below the proper site of injection. This proves that the diffusion of the drug must be very limited. For operations in the vagina and rectum, where the anesthetic is injected low in the spinal canal, there is very little fall in blood pressure. The real danger of spinal anesthesia, as we see it, is cerebral anemia from the fall in blood pressure due to blocking nerves to the splanchnic area; and for abdominal surgery this is necessary, and herein lie the contraindications. Patients with low blood pressure from shock, hemorrhage or toxemia and patients with very high blood pressure and inelastic blood vessels are poor subjects for spinal anesthesia. If one attempts to include this group in his work with spinal anesthesia, he will have many disagreeable experiences, and sooner or later will come to disaster. Because of these contraindications great care should be used in selecting this anesthesia for the aged. Labored respiration from any cause is a contraindication to its use. Spinal anesthesia is not safe for surgical procedures above the diaphragm. The advantages of spinal anesthesia over other types of local anesthesia for deep work are the simplicity of the technic; the completeness of the anesthesia, the perfect relaxation of the muscles, the less amount of drug necessary.

WHAT ARE THE ADVANTAGES OF SPINAL OVER GENERAL ANESTHESIA?

Aside from certain minor advantages, such as lessened postoperative nausea and vomiting, briefly, they are complete muscular relaxation, permitting extensive operations with good exposure and with a minimum of trauma to the patient, lessened hemorrhage, lessened exhaustion and therefore a minimum of shock. The nerves to the operative field are completely blocked. A patient under spinal anesthesia has a low blood pressure, shallow respirations, muscular relaxation, and slow pulse, indicating a minimum expenditure of energy as contrasted with the flushed skin, increased pulse and respiratory rate and moist skin of a patient under ether. With the abdomen open, the flaccid, completely relaxed walls can be lifted so as to expose all parts of the abdomen, the intestines lie quiet and there is no straining, no muscular resistance, no forcing of intestines into the operative field, so that the surgeon can do his work under good exposure and therefore a minimum of trauma to the patient. With the low blood pressure there is much less hemorrhage. This is very striking in comparing a perineorrhaphy done under ether and one done under spinal anesthesia. The same is true of the bleeding from separation and division of extensive adhesions in the abdomen, so that patients leave the operating rooms after extensive severe operations, with a dry skin, with a pulse of 72-90, although the anesthesia has completely disappeared. This is the the most important value of spinal anesthesia, as there is no other type of anesthesia that will let the patient down so easily in prolonged extensive operations such as the radical operation for carcinoma of the uterus, adherent tumors, extensive adhesions due to pelvic inflammatory conditions, resection of stomach and intestines, the extensive repair work necessary for the surgical treatment of prolapse of the uterus, etc.

For the same reasons spinal anesthesia is most valuable for less extensive procedures in patients physically handicapped, for large adipose patients without the above mentioned contraindications but who usually take general anesthetics poorly, for patients with respiratory lesions such as pulmonary tuberculosis, for patients with swelling in the feet and shortness of breath, showing circulatory disease or exhaustion, provided these are not so extreme as to contraindicate operation under any type of anesthesia. The slow pulse and low blood pressure allow more rest to the heart and vascular system during the operation than these organs experience normally with the patient lying in bed. And lastly, spinal anesthesia is valuable for the nonrobust, asthenic type of patient whom we consider of poor vital resistance, such as women who have experienced multiple frequent pregnancies and are worn out, so to speak, and are not too good risks for abdominal operations. The biggest field for spinal anesthesia is in abdominal and pelvic surgery and in certain operations on the extremities which are prolonged and shock-producing, where muscular relaxation is desired, or where some form of local anesthesia is preferable.

The most serious handicap to the development of spinal anesthesia has been the use of too toxic drugs, and the attempt to make the method fit all cases. There are many patients in whom it doesn't matter whether they have general or local anesthesia. There are other patients in whom local anesthesia is preferable, and there are still others in whom local anesthesia is vital. Spinal anesthesia has a place in surgery, but it is far from fool-proof and should be undertaken only with a full knowledge of its technic and contraindications.

NITROUS OXID ANESTHESIA

J. WADE ELPINSTONE, M.D.

Priestly was the first to produce this gas but it was Sir Humphrey Davy who noted its anesthetic properties, and in 1844 H. G. Wells was the first to use it in dentistry. At this time nitrous oxid gas was used alone and the anesthesia produced was no doubt partly due to asphyxia. It was so used until 1868, when Andrews of Chicago added oxygen. This is the basis of our present technique.

At present nitrous oxid is rarely used alone except for very minor operations, such as paracentesis of the tympanum and for dressings. Generally speaking, nitrous oxid anesthesia is really nitrous oxid-oxygen anesthesia. The oxygen has two functions: to regulate the dosage and depth of anesthesia and to carry on the bodily functions. The ideal anesthetic is one that is: 1, safe; 2, pleasant for the patient to take; 3, produces the desired relaxation of the musculature; 4, does not interfere with the bodily functions; 5, has no bad sequelæ.

In looking over the anesthetic agents in use at the present time there is not one that satisfies all these requirements. Nitrous oxid meets many of the qualifications, but is lacking in two important points, namely, safety and relaxation.

A great many physicians have been led to believe that nitrous oxid anesthesia is absolutely safe. It is rather hard to determine the death rate, and one is struck very forcibly by Gwathmey's statement of one death in every 657 administrations.

The other objection to this form of anesthesia is the lack of muscular relaxation sometimes desired in abdominal surgery. As generally given in the proportion of 7 to 8% of oxygen to produce anesthesia and 10 to 20% of oxygen to produce analgesia with consciousness, it will be seen that the margin of anesthesia is very narrow.

As nitrous oxid has no effect on muscle tissue it is necessary to consider two important factors which will aid in accomplishing the desired relaxation, namely, preliminary medication and gentleness in handling tissues.

The preliminary use of morphin and atrophin hypodermically before operation is essential. It should be given preferably three-quarters of an hour before operation. If this preliminary treatment does not produce satisfactory relaxation, a small amount of ether may be given during the administration of nitrous oxid.

The second factor is the gentleness with which the tissues are handled. The excessive tugging and pulling, the rough handling of the viscera and the forcible placing or removing of retractors and sponges are sure to lead to disappointment and the surgeon will find it very difficult, if not impossible, to operate satisfactorily.

Nitrous oxid is the anesthetic of choice in operations in which there are acute or chronic infection of the respiratory tract, diseases of the kidney and bladder, diabetes, toxemias, such as hyperthyroidism and in pregnancy and in anemias.

FACTORS WHICH DETERMINE THE SELECTION OF AN ANESTHETIC

R. R. HUGGINS, M.D.

From the crude methods of early days anesthesia has developed into a specialty which requires the highest degree of art on the part of those concerned in its administration. Not only should the anesthetist be trained in the physiology of the various methods but he should be qualified to judge the vital resistance of his patient. If the conduction of anesthesia is considered from this standpoint the problem becomes a simple one, and if thoroughly comprehended the selection of the best anesthetic for a given case becomes less difficult. In the second chapter of Genesis and the twenty-first verse we read: "And the Lord God caused a deep sleep to fall upon Adam and he slept. And He took one of his ribs and closed up the flesh instead thereof." In quoting this passage of Scripture which necessarily antedates all others for thousands of years, a test is introduced which is of interest historically and one also to which reference will be made later in dealing with a very practical side of the subject.

The aim of the anesthetist has widened and his responsibility increased. It is his duty to see that the patient shall approach the operation with a quiet mind and free from fright and apprehension, that he shall pass through the procedure in a condition which gives the surgeon the greatest possible opportunity for expeditious work and that finally he shall emerge from the anesthetic with sufficient strength to carry him safely through convalescence.

That as yet we have no perfect anesthetic is proved by the constant search for new agents as substitutes for those now in use. If chloroform and ether had been proved free from all danger and ill effects, nitrous oxid, ethyl chlorid, ethylene, local anesthesia and various other methods would never have come to life. It is our belief that there is no anesthetic known to-day which is generally applicable and free from danger. Our problem is to select the one best adapted to the individual case.

There are two methods of anesthesia, the inhalation form, or general, and local. In considering general anesthesia, we must keep in mind that sleep from any drug does not entirely eliminate shock and that continuous stimulation from direct injury to the nerve endings eventually results in exhaustion of the nerve centers. Ether is an active stimulant for a certain length of time and then it becomes a depressant as a result of absorption and fatigue from its earlier stimulating effect.

A method for the exact determination of the amount of energy expended over a given period of time under various forms of anesthesia will mark a distinct advance in our knowledge of the different effects of anesthetic drugs. In addition to the mechanical factors which result from the stimulation of ether vapor there is its poisonous effects upon the metabolic processes which gives concern. It is the latter effect which gives the anesthetist anxiety and often in his effort to economize in the amount of ether given, great embarrassment is encountered by the operator in abdominal and pelvic surgery on account of rigid muscles. Shock is thus increased and in the final analysis much is added to the total quantity of ether given. It is in this connection that I should like to emphasize the great value of deep etherization of the patient in abdominal work. The deeper the anesthesia within limits of safety, the less shock to the patient. A light anesthesia under these conditions may not only result in bad surgical work on account of poor relaxation but it also permits a greater insult to the central nervous system. It is for this reason that nerve blocking to the greatest possible extent is a most valuable adjunct in all forms of inhalation anesthesia. The record of the first operation as above recited from the book of Genesis could just as easily read "Sleep" but it does not. It reads "A deep sleep."

In this short paper it is impossible to enumerate the factors which would determine the selection of ether as an anesthetic. It should not be given to patients who are handicapped by a weak myocardium which is the result of chronic toxemia or infection. This is true especially where the operation is one accompanied by severe shock, such as in badly adherent pus tubes, in radical removal of the uterus for carcinoma and in gall-bladder disease of long standing where the vital resistance is low. In this class of patients the anesthetic undoubtedly holds the balance of power and if there is to be a low mortality, great care must be exercised in the selection of the anesthetic.

The physiological action and immediate effects of ether are well known to all. It is credited with the lowest mortality of all anesthetics. The venture is made that its actual mortality has never been written. In other words, no estimate has yet been made as to how many patients have died after regaining consciousness where the largest contributing factor in the death was the effects of the ether. The reasons in addition to its toxic action are: shock as a result of its failure completely to abolish sensation of nerve endings, exhaustion from over-stimulation and the effects of muscular rigidity. The patient's life is in jeopardy under such handicaps if in the hands of a slow tinkering surgeon and a good anesthetist. This is equally true in the hands of a good surgeon and an anesthetist who insists on using a poor carburetor and does not have the wisdom to step on the accelerator at the right moment.

The use of nitrous oxid and oxygen for extensive operations has shown marked increase in recent years. Alone, its use is limited to short and superficial operations. In combination with opium, local infiltration anesthesia and ether, it has a wide field of usefulness. For superficial operations anywhere, for operations on the extremities and minor gynecological operations unless contraindicated, it is ideal. In abdominal surgery, unless anesthesia and muscular relaxation are secured by the addition of other drugs, nitrous oxid is useless. The reputation it has enjoyed in recent years has been falsely earned because sufficient emphasis has not been placed on the part played by the other agents used in the combination, by whose effects it has been a success. For patients in a state of shock, those feeble from prolonged illness and in diabetes, nitrous oxid has especial advantages. Patients who are excitable, plethoric or very muscular are not good subjects. It is a dangerous anesthetic in the presence of a weak heart muscle, where there is impeded respiration.

It is by comparison that we gain a real perspective of the effects of inhalation anesthesia in contrast to local. In the latter there is but little shock or exhaustion and the general condition of the patient is about the same after as before the operation. The heart muscle has not been injured from overstrain and stimulation. The patient is in full possession of his reserve strength at the time when it is needed to carry him over the rough road of convalescence. We do not give enough consideration to the importance of this stage and oftentimes strength and energy which are so badly needed at this period, particularly for the first forty-eight or sixty hours, have been needlessly consumed or perhaps wasted while the patient is on the operating table. This is especially true in the handicapped patient. Under the proper preparation and conditions, the patient does not receive the shock of operation until the return of sensation, with any form of local anesthesia. There is no difference in the results of the various forms of local anesthesia, provided a complete block has been secured. Whether it be local infiltration of the tissues by means of novocain, the blocking of certain nerves, paravertebral, sacral or spinal anesthesia, the result is the same.

Each of these methods has a limited field. With patience and the proper technique many major operations may be done with local infiltration. It has many of the same handicaps as nitrous oxid, and unless combined with some form of inhalation anesthesia, is not generally applicable. We have discarded paravertebral and sacral anesthesia as too uncertain. About ten years ago our interest in the work of Dr. Crile led us to make a careful study of his methods of anesthesia. We concluded finally, that his results depended mainly upon the skillful administration of local anesthesia. He kept his patients in a light sleep with nitrous oxid, thus allaying nervousness, by successful nerve blocking he prevented shock, and with the skillful administration of ether when good relaxation was necessary, he secured ideal results. The only trouble was that he gave most of the credit to nitrous oxid. He really showed us the way to spinal anesthesia, for we decided that if nerve block is the secret of shockless surgery the best way is to go to the fountainhead and place the novocain in contact with the nerve as it emerges from the spinal cord. Our indications for its use lie in the kind of cases above mentioned where we prefer not to use ether. It is given for a definite special purpose and we value it highly because we know it has been of great assistance to us over a period of ten years. In the nervous or psychapathic patient one is foolish to attempt the use of any form of local anesthesia unless it is absolutely necessary. In a general way, we reserve its use for the patient who is poorly equipped and where we believe the anesthetic holds the balance of power.

THE PITTSBURGH NEUROLOGICAL ASSOCIATION

SOME PROBLEMS IN CLINICAL NEUROLOGY AND PSYCHIATRY*

Theodore Diller, M.D.
Pittsburgh, Pa.

Case 1. Brain tumor of enormous size representing regrowth of one partially removed ten years ago.

Specimen presented looked like one brain superimposed upon another. It was firm tumor of enormous growth, nearly as big as two fists. The history of this case had been published ten years before in the *American Journal of the Medical Sciences* in connection with Dr. Robert Miller, who had operated on the patient, removing a tumor in the upper rolandic region. Patient was much relieved of symptoms and the operation was for the time being a success. But after a while the tumor began to grow again until it attained the enormous size shown in the specimen. Dr. Bruecken, who examined the tumor, considered it to be an endothelioma and probably grew from the falx cerebri. An interesting feature of the clinical history was that symptoms first manifested themselves by jacksonian epileptic attacks beginning in the hand despite the fact the first irritation appeared to be in the leg area. This had existed a considerable time before any other symptoms of brain tumor manifested themselves.

Case 2. May essential epilepsy manifest itself by seizures in which consciousness is preserved?

Although every now and then some observer records epileptic attacks existing where consciousness is preserved, Dr. Diller had always believed that loss of consciousness was an essential part of the attack of major or essential epilepsy. But he has recently seen in a man 35 years of age convulsive seizures which occurred from time to time which appeared to him in every way like those of true or essential epilepsy in which consciousness was preserved. But at the time of this presentation, Dr. Koenig, the house physician at St. Francis Hospital, received information that the attacks, which were very frequent, had disappeared after having the teeth and tonsils removed. And so this one case seemed after all a doubtful one and might eventually have to be called one of hysteria.

Case 3. A case of hemiplegia for diagnosis.

A high school boy, aged 16, a few days ago wakened in the night and in attempting to go to the bathroom found his left leg was weak so that he stumbled. The next day this weakness continued but he was able to attend school and the following day, although the weakness had progressed and he noted the left arm was weak he was still able to go about. On this day he was examined as regards his eye grounds and sinuses, which were discovered to be normal. During the next 48 hours paralysis rapidly deepened and when Dr. Diller saw him that afternoon the report was made of complete hemiplegia on the left side, including the face. There was a Babinski toe reflex on the left side.

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*A paper presented at the meeting of the Association, January 28, 1924.

Sensory symptoms were altogether absent. It was pointed out that there was no poliomyelitis or lethargic encephalitis in the neighborhood. The question of diagnosis presented itself. Dr. T. M. T. McKennan was of the opinion that the case was one of thrombosis. Dr. Diller expressed concurrence with this view, stating he could not see how symptoms could be accounted for on any other theory than that of thrombosis with secondary softening.

Case 4. A case suggesting endocrine disturbance not supported by laboratory tests.

A boy aged 19, came complaining of "sleepy spells." He falls alseep readily sitting in a chair at any time he is quiet. These attacks have been very frequent of late and now he even falls asleep for a short period while walking. Also if he starts to laugh this "does not go" as well as it did. When he laughs he leans forward and is apt to become sleepy afterward. From January 1, 1923, to February 15, 1923, he gained 30 lbs. in weight. There is nothing peculiar in the appearance of the boy and neurological examination was negative. X-ray examination as regards basal metabolism, sugar tolerance, etc., all negative. It is a question whether the attacks are epileptic or narcoleptic. There was something in the conduct of the patient that suggested there was a psychic feature in the clinical picture.

Case 5. Patient presenting Parkinson's syndrome with history of cerebrospinal syphilis.

Man about 35 presented himself. At once his face and gait suggested Parkinson's syndrome of lethargic encephalitis. The history, however, revealed that the man had been in St. Francis Hospital several years before with a diagnosis of meningeal syphilis, and blood and spinal fluid both showed positive Wassermann at this time. He later developed partial hemiplegia with fingers in position suggesting athetoid movement. There is a doubtful Babinski toe reflex.

Dr. Diller pointed out that paralysis agitans was one organic disease that is not caused by syphilis, and yet here was a man in which syphilis appeared to be the etiological factor in producing Parkinson's syndrome—a thing he had never before encountered in his clinical experience. The history did not indicate an intercurrent attack of lethargic encephalitis.

Case 6. The coexistence of dementia præcox and cerebrospinal syphilis.

There are a considerable number of cases in which there is a history of syphilis and laboratory tests are positive, where the clinical symptoms are more or less like those of dementia præcox. Dr. Diller cited one, the first, case he had noted several years ago, the case of a young man who presented marked mutism and negativism, of various sorts, holding saliva in the mouth, refusing to evacuate bladder and bowels and afterwards exhibiting furious catatonic excitement. In this case the discovery of positive evidence of syphilis by laboratory tests led some to make a diagnosis of paresis. But the clinical signs seemed so clearly those of dementia præcox that Dr. Diller held that it probably existed as an independent affection, unrelated to syphilis. Since this case he has seen a considerable number of more or less similar cases. The following explanations present themselves: (1) that syphilis and dementia præcox existed wholly independent of each other, or in other words that præcox was in no way caused by or related to the existing syphlis; (2) that dementia præcox was brought forward or precipitated by the presence of syphilis; and (3) that syphilis manifests itself sometimes by mental symptoms of a præcox type.

To Dr. Diller it seems that all three of these views might be used to explain the case, but he should think the third view the least probable.

PHILADELPHIA GENERAL HOSPITAL

MONTHLY CASE REPORTS

BY THE STAFF OF THE PSYCHOPATHIC DEPARTMENT

During the recent wave of spiritualism which swept over the greater part of the civilized world many cases of frank psychoses developed in the neurotic individuals who took up this form of the occult. The following case is of interest in this connection:

A widow, fifty-seven years of age, was seen first on January 24, 1924. Her husband died twelve years ago and since then she has been on the point of remarrying several times but her husband's spirit always seemed to intervene. She had her menopause at the age of thirty. The family history was negative for mental and nervous diseases with the exception that one uncle died in a hospital for the mentally ill. A sister said that the patient had always been nervous, had been petted by the family, was given to violent attacks of temper and that her feelings were always very tender and easily hurt.

Present Illness: During the two or three days before she was seen she was greatly excited, sleepless, restless and had not eaten anything. She said that someone had put an evil spirit in her. For a few weeks preceding the onset of these symptoms she became greatly interested in spiritualism. One of the roomers in her house was a man of some education, an organist in a church, and he converted her to a belief in spirits. He suggested to her because of her nervous make-up that she would be just the type of a person who could do automatic writing.

Physical Examination: The woman was well nourished and developed. Heart, blood pressure, lungs, cranial nerves, deep and superficial reflexes were normal. The tongue was heavily coated and dry. The breath was sweet and heavy, and the skin was dry and hot. The temperature was normal.

Mental Examination: As soon as I entered the patient's room she insisted that I hold both her hands to give her strength and increase the number of her vibrations; after a short period she said that I was irresponsive and insisted that I yield to Dr. ——. Then, in an imperious tone, she commanded one of her boarders to get her a glass of wine to give her strength; next she ordered her sister to bring her a drink of water and then severely reprimanded the sister because a drop of water fell on her face.

She said that she was a victim of an evil spirit which was transmitted to her by a man whom she called a degenerate. She had been doing entertainment work in a government hospital, and while dancing with a man, who she later learned had syphilis, he transmitted an evil spirit to her. When asked if she meant by this that he gave her syphilis she said "No." She then got in touch with the spirit of her dead husband

and under strong suggestion she wrote automatically, in part, as follows: "Tell him you are ready. Believe they are good men and I misjudge them, but you are coming back. He is driving him out." Before she wrote automatically I had told her that I would drive the evil spirit from her. Her husband's spirit then proceeded to say, "Your sexual organs are congested." The woman seemed to be almost in a state of self-hypnosis and she yielded in part to strong persuasion.

Clinical Course and Outcome: The blood and urine examinations were negative. A lumbar puncture was not done. She was given free purgation, a hot pack every day for three days and a quarter of a grain of luminal three times daily. At each visit it was strongly impressed upon the woman that she was recovering and that the evil spirit with which she was afflicted had passed from her soul. At the end of two weeks she was as well as she had ever been. She then revealed herself as a talkative, petulant, psychoneurotic individual; her conversation frequently reverted to men and the number of chances at marriage which she had had. The patient said since her menopause at the age of thirty she had been without any sexual desires.

Comment: The entire duration of this psychosis was about three weeks, and a good result was obtained by combination of elimination, suggestion and mild sedatives. One of the lessons to be learned from a case of this sort is that psychoneurotics and those of substandard mental development should not deal with things spiritualistic. Geo. W. Wilson, M.D.,

Visiting Physician to the Neuropsychiatic Dept.

ABSTRACTS

ACUTE TONSILLITIS

By W. Minster Kunkel, M.D.
Harrisburg, Pa.

"A Clinical Study of Acute Streptococcus Infection of the Pharyngeal Lymphoid Tissue (Acute Follicular Tonsillitis)," by A. R. Felty and A. B. Hodges, in the *Johns Hopkins Hospital Bulletin*, October, 1923, has apparently established this condition as a clinical entity of specific etiology. A summary of their observations and conclusions follows:

The statement throughout practically all textbooks that acute tonsillitis has a varied etiology is a misconception due to the employment of surface instead of poured plate cultures. As a result of their study the authors are led to believe that in no case of acute tonsillitis have organisms other than the beta-hemolytic streptococcus been found to play a pathologic rôle.

The clinical picture: Onset is sudden with moderately sore throat, frontal headache, and general malaise. During the next twenty-four hours the patient feels feverish, and angina and dysphagia become more severe. The anterior cervical lymph glands become tender and swollen. The pharynx is diffusely reddened and inflamed. The surface of the tonsil is spotted with pin-head-sized points of yellowish white exudate. The temperature with twenty-four hours reaches 101 to 103, and on the third or fourth day takes a critical drop to normal within twelve to eighteen hours, with a rapid disappearance of the constitutional symptoms. The patient is generally well enough to resume his duties within a week after the onset of the disease.

Complications: The occurrence of complications is the exception. They are usually peritonsillar abscess, sinusitis, and otitis media.

The differential diagnosis from simple pharyngitis, Vincent's angina, diphtheria and scarlet fever as a rule presents no difficulty. Epidemic sore throat, however, having the same culture features must be distinguished by the fact that in the latter disease the outbreak is explosive, there is present an infected milk supply, the symptoms are more severe, and the tendency to serious complications is greater.

Treatment: Therapy is directed solely toward symptomatic relief. Fluids should be forced up to three or four liters a day. Bowels should be moved freely. Satisfactory results have been obtained by the immediate administration of Dover's powder grains X, with codein grains I and phenacetin grains X.

The use of an ice collar and the feeding of cracked ice are of value. The application of local antiseptic is of no benefit and possibly harmful. Throat irrigations with hot normal salt solution usually give great relief.

In the same issue, *"A Clinical Epidemiological Study of Acute Tonsillitis and Acute Upper-Respiratory Infection,"* by A. B. Hodges, led to the conclusions that tonsillitis is seasonal in occurrence, that there is no relation demonstrable between weather conditions and the disease, and that the occurrence of acute tonsillitis, colds and acute pharyngitis run parallel.

In the August number of the same bulletin A. J. Bloomfield and A. R. Felty present in *"Prophylactic Vaccination Against Acute Tonsillitis,"* a study of ninety cases, of which thirty-three were carriers of beta-hemolytic streptococcus, and fifty-seven noncarriers. Their conclusions were that carriage of beta-hemolytic streptococcus in the tonsil was associated with a high degree of resistance to acute tonsillitis, that susceptibility was reëstablished if the carrier state terminated, and finally that the protective power of the inoculation is suggested by the lower incidence among the vaccinated, and above all by the extremely mild form which the disease took in those who did develop infection.

In the December issue A. J. Bloomfield and A. R. Felty in a paper on *"The Dissemination of Hemolytic Streptococci Among a Group of Healthy People,"* have shown an incidence of forty-one per cent of carriers of beta-hemolytic streptococci among a group of nearly two hundred healthy young women. Under the conditions of the experiment this parasitism appeared to be remarkably stable. They further remark that as it has been demonstrated that certain types of epidemics are preceded by a great rise in the carrier rate, it would be interesting to determine whether or not the same condition obtained in thirty-three subjects of which control cultures had been made several months previously when streptococcus disease and acute respiratory infections were practically absent from the community. The re-culture showed a striking change; plate after plate was seeded with markedly hemolytic streptococci. On careful study, however, they were found to fall in the alpha prime group, which by the method of Brown can be distinguished on the poured blood-agar plate by incomplete hemolysis around the deep colonies. The alpha prime types are apparently nonpathogenic. The authors state, furthermore, that they have never recovered from a case of tonsillitis, erysipelas, scarlet fever or other acute streptococcus infections, a strain which did not have typical and undoubted beta-like characteristics. Unless this distinction is made the danger of making unwarranted etiological conclusions is obvious.

ACUTE EMPHYSEMA OF THE CHEST IN A NEWBORN*

I. Andrussier, M.D.

PHILADELPHIA, PA.

Mrs. S. St., para. III, aged thirty-one, with a normal-sized pelvis (sp. 25, cr. 28, ext. conj. 20) was delivered of a boy October 6, 1922, at 10:10 P. M., by a mid-forceps. The patient was 10½ hours in labor; position of the baby, an R O P; weight 9 14/16 pounds. The forceps was not a difficult one and indicated by threatened asphyxia of the baby—fetal heart sounds below 100.

The baby was born first degree asphyxiated and began to cry immediately after some mucus was removed from the mouth. No artificial respirations were done.

Condition of the baby was very good until 3:40 A. M., 10/7/22, when the attending nurse heard the baby crying vigorously and noticed a slight swelling on the right side of the neck. The house physician was notified immediately. About five minutes later the examination by the house physician revealed the following:

A diffuse swelling of the right side of the neck extending up the face and downwards to the chest which yielded the typical crackling sensation on palpation. No swelling of the epiglottis. Lungs and heart negative. No abnormal findings in the abdomen.

This cutaneous emphysema increased rapidly around the neck, the respirations became more and more labored, the baby became cyanosed and expired fifty minutes later—4:30 A. M.

Autopsy Findings: The head was not examined. The abdomen was frankly negative. The mediastinum was filled up totally with air, resembling a blown-up sack. The thymus, of good size, was lying on the top of it as if riding upon both lateral lobes. The heart and lungs were negative. The trachea showed on the posterior wall near the bifurcation a thinned-out spot, but no rupture could be found there macroscopically.

PROPAGANDA FOR REFORM

Immunization Against Typhoid.—Ordinarily typhoid vaccine is administered at intervals of seven days. It is said that if the interval is less than seven days, the immunity may be less than after longer intervals. It is asserted also that the maximum response follows when the intervals between the injections are lengthened to eighteen or twenty days. No definite statement can be made as to what the optimal intervals really are. Immunity after antityphoid inoculation is not absolute. Army medical officers express the opinion that immunity from inoculation begins to decline in from two to two and one-half years; but even after four and five years, the typhoid rate of inoculated troops has been estimated at about one-fourth that of uninoculated troops. (*Jour. A. M. A.*, Feb. 2, 1924, p. 411.)

Treatment of Lichen Planus.—Lichen planus can be usually successfully managed by the intramuscular injection of some preparation of mercury. Mercuric chlorid is commonly employed in a dosage of 0.015 gm. (one-quarter grain) twice weekly. A 1 per cent solution of this drug in physiologic sodium chlorid solution is prepared, and 15 drops injected at the first dose, 20 the second, and subsequently 25 at each injection. From eight to sixteen injections are commonly sufficient to clear up the disorder. Local measures for relief of itching may be employed at the same time. (*Jour. A. M. A.*, Feb. 2, 1924, p. 411.)

The Insulin Reserve.—It is highly probable, according to R. N. Wilder, that patients with the acute type of diabetes will in a few years lose all native tolerance for glucose, and become completely dependent on insulin. In such cases 37 units (old standard) of insulin may be required, and in some cases as much as 56 units a day. A partially diabetic patient may suddenly be converted into a totally diabetic patient by infection and, therefore, a month's supply of insulin should be kept on hand. Reginald Fitz and William P. Murphy state that there are two classes of diabetic patients: those to whom insulin is a luxury, and those to whom it is a necessity. They hold that the wise physician will conserve the use of insulin in the cases of such diabetic patients as can dispense with it or use only small amounts and will hold it in reserve as an indispensable product, for the patients who require large amounts in order to secure definite results. (*Jour. A. M. A.*, Feb. 9, 1924, p. 473.)

Ichthyol and Ichthalbin Omitted from N. N. R.—The Council on Pharmacy and Chemistry publishes a report announcing the omission of Ichthyol and Ichthalbin from New and Nonofficial Remedies and a report on the therapeutic value of Ichthyol on which the deletion of Ichthyol and Ichthalbin is based. Ichthyol was introduced into dermatology about forty years ago, and it came into wide use during its skillful exploitation. It has been difficult to obtain acceptable evidence concerning the therapeutic value of Ichthyol. The opinion in regard to its value has been divided, with good observers or both sides of the question. After some years of consideration and doubt, the Council has come reluctantly but decisively to the conclusion that there is no satisfactory evidence that Ichthyol has any therapeutic value other than that of a mild antiseptic and that of being soothing to inflamed mucous membranes. Merck and Co., who market the product in the United States, declined to limit their claims so as to harmonize them with the views of the Council, and, therefore, the Council has omitted Ichthyol from New and Nonofficial Remedies. The Council also omitted Ichthalbin, marketed by E. Bilhuber, Inc., New York. Ichthalbin is described as a compound of ichthyolsulphonic acid and albumin. Its actions are stated to be essentially the same as those of Ichthyol. Therefore, E. Bilhuber, Inc., was informed that, unless the therapeutic claims made for Ichthalbin conformed to the claims permissible for Ichthyol, Ichthalbin would be omitted from New and Nonofficial Remedies. Circulars in use during 1922 contained recommendations for the internal use as an intestinal antiseptic and in skin diseases. Since these claims were incompatible with the evidence obtained by the Council, Ichthalbin was omitted. (*Jour. A. M. A.*, Feb. 16, 1924, p. 565.)

COMMUNICATION

STATE BOARD OF MEDICAL EDUCATION AND LICENSURE

Harrisburg, March 15, 1924.

Atlantic Medical Journal,
230 State St., Harrisburg, Pa.

Gentlemen: At the meeting of this Board on February 28, 1924, the following licenses were restored or revoked, as indicated:

---

*From the Jewish Maternity Hospital.

Dr. Horace L. Kulp, Ardmore, Pennsylvania. Dr. Kulp was restored to licensure at the above meeting, and is now in good standing as a physician in the state. His license had been revoked June 2, 1920.

Dr. James B. Graff, Portage, Pennsylvania. Dr. Graff was restored to licensure, his license having been suspended last August.

Dr. William H. Bricker, Jr., Philadelphia, Pennsylvania. Because of Dr. Bricker's conviction in the courts at Mays Landing, New Jersey, of having committed abortion, his license to practice medicine in the state of Pennsylvania was revoked at the above meeting. The decision of the court was sustained after numerous appeals to the higher courts.

Dr. John A. Mason, Philadelphia. Because of Dr. Mason's conviction before the Federal Court of violation of the Harrison Act, his license was revoked. He is now serving sentence in the Federal Penitentiary at Atlanta, Georgia.

Yours very truly,
I. D. Metzger,
President, State Board of Medical Education and Licensure.

A GOOD EXAMPLE

The Allegheny County Society are greatly to be commended for their efforts to get out medical voters at the next election. Witness the letter sent out by their Committee under date of March 15, 1924:

REGISTER WEDNESDAY, MARCH 19, 1924

RE: THE "ONE BOARD" MEDICAL ACT

Dear Doctor:

The 1923 House of Delegates of the Medical Society of the State of Pennsylvania authorized its Public Health Legislation Committee to employ a constitutional lawyer to draft a so-called "One Board" Medical Act.

The Medical Legislative Conference of Pennsylvania, representing our State Society, the Homeopathic and Eclectic State Societies, has determined that they will, during the session of the 1925 Legislature, aggressively present for favorable consideration the "One Board Bill."

The Board of Directors of the Allegheny County Medical Society unanimously adopted a resolution creating a committee to secure the pledges of the members to register and vote at the primaries and the general election. It was the sense of the meeting that our political influence without our voting strength is nil.

The proposed "One Board" Bill provides for preliminary and professional training adequate to the proper diagnosis of disease and injuries. By its provisions all who would legally practice any branch of the healing art in Pennsylvania would pass the same examination in the above mentioned fundamentals and be licensed to practice, if desired, a limited system of treatment. In order that we may be assured of your full coöperation in properly presenting this important public health subject to the legislative candidates from Allegheny County, we urge you to immediately respond to the questions on the *enclosed stamped postal card* and to mail the card at once.

Sincerely yours,
Walter F. Donaldson, *Chairman;*
K. I. Sanes,
Robert L. Anderson.

P. S.—The Pittsburgh Medical Bulletin contains each week information regarding the "One Board" Bill.

VOTE AT THE PRIMARIES APRIL 22, 1924

The card enclosed with the letter reads:

Are you registered and qualified to vote at the primaries, April 22, 1924? ....
Will you vote in the primaries, April 22? ....
Do you fully approve of the proposed legislation known as the "One Board" Medical Act? ....
Name ....................................M.D.
Address ....

Similar action might profitably be taken by all other societies.

NOTICE

CALL FOR VOLUNTEER PAPERS READING SESSION

The Committee on Scientific Work, at its first meeting at Harrisburg, February 5, 1924, instructed that a call be issued for eleven volunteer papers for the Reading Session of the Medical Society of the State of Pennsylvania, October 6 to 9, 1924.

(1) The subject and a brief outline of all papers must be furnished the Committee before April 21, 1924.

(2) The time limit for the reading of each paper is ten minutes.

(3) An author wishing stereopticon or projectoscope for the illustration of his paper must ask for same when submitting title and outline of paper.

(4) Titles of papers are to be sent direct to section officers or the Chairman of the Committee on Scientific Work.

(5) The Committee reserves the right to decline any paper not deemed of sufficient merit for the sessions.

Thomas G. Simonton, M.D., *Chairman,*
5321 Fifth Ave., Pittsburgh, Pa.

AMERICAN MEDICAL ASSOCIATION BULLETIN

The A. M. A. took a fine long step forward when the House of Delegates voted to supply the *Bulletin* to every Fellow of the Association free or as part of the service to members.

Are you reading your *Bulletin* regularly and carefully? we recently asked ten members as we met them in the day's work. Three of the ten never looked at it; six read it carefully, and one did not remember ever to have seen a copy. This editorial note is to call attention to the importance of the *Bulletin* as a source of interesting and important information and to urge its more careful perusal by a larger number of Fellows.—*California and Western Medicine,* March, 1924.

THE ATLANTIC
MEDICAL JOURNAL

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The Journal does not hold itself responsible for opinions expressed in original papers, discussions, communications or advertisements.

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April, 1924

EDITORIALS

ONE YEAR

The Atlantic Medical Journal, continuing the Pennsylvania Medical Journal and the Delaware State Medical Journal, made its bow to the medical profession of both states one year ago, with the issue for April, 1923.

It has been the policy of the Committee on Publication to take advantage of every plan which has been presented to improve the appearance as well as the contents of each number of this Journal. This has been reflected in the many valuable contributions which have been offered. It has also been reflected in the additional pages of advertising, which are an indication of the value placed by advertisers upon the Journal.

It is not our policy to boast, but a desire to boost that causes us to call to the attention of our readers the first anniversary of the change which was made. We also wish to appeal to the medical public for suggestions as to how our Journal may be improved, for we desire to make the coming year prove a better one for the Journal than the last has been.

THE SURGICAL SECTION

The Officers of the Surgical Section have prepared an interesting program for this year.

The first symposium will be on intestinal obstruction. Dr. Erdman, of New York, will be the invited guest. The other members taking part will be from Pennsylvania.

The treatment of intestinal obstruction has changed in the last ten years and it was thought that all members would be interested and a review of the subject would be of inestimable value. The Committee knew of no one who could handle this subject better than Dr. Erdman.

The second symposium will be on local anesthesia. The guest of the day will be Dr. Farr of Minneapolis. There will be four papers on this subject. We feel sure that the lantern and moving picture demonstrations will instruct many of us in the finer points of this technique.

The following session has a well selected group of papers on general surgical topics, one paper in particular, by a well known surgeon, "Failure After Prostectomy," being noteworthy.

The Committee has seen to it that no subject which has been covered in the last few years will be repeated. We have had a large number of papers from which to select and feel that in this session, you will have the cream of the papers of the year. G. M. D.

THE OTHER SIDE

That the present compensation law of this state is unsatisfactory to the medical profession is an established fact that no one questions. Every possible effort is being made by the Compensation Commission to bring about changes in the law that will be mutually agreeable to the physician, the hospital and the insurance carrier. The problem is not an easy one to solve, largely because it is looked upon in a different light by the various organizations interested in it. It would seem that the solution would lie in coöperation, or in other words, adjusting the differences of opinion, by a mutual desire to see the other fellow's side.

At a recent conference with representatives of a number of the insurance companies doing compensation work, it was requested that they speak frankly of their difficulties with the medical profession. It will not be amiss to discuss them briefly, for it is always well to see both sides of a question.

That the physician is generally a poor business man is undoubtedly the opinion of the insurance companies. It was brought out that a ridiculously wide range of charges are being made by surgeons treating compensation cases in dispensaries and out-patient departments. In addition, the hospital apparently renders bills for such cases, the charge varying greatly. As a direct result the insurance company is often asked to pay a bill that is actually exorbitant, although the intent to make it so is lacking on the part of the doctor or the hospital. The real cause for this confusion is that the doctor pays no attention to the hospital charge and the hospital on its part does not interest itself in the amount of the doctor's bills. Thus is brought about a condition of affairs, in which the insurance carrier will receive a bill for a few cents in one case, and for as many dollars for a similar one in another hospital. The situation at present unquestionably must be remedied. At the last meeting of the Compensation Commission, consideration was given to this phase of the compensation problem. It was the feeling of the Commission that each community should be asked to set a standard charge for compensation cases treated in hospital dispensaries, this charge to include both the hospital and the physician's bill. It should be left to the individual hospital to arrange with the dispensary staff an amicable division of the charge made. It is therefore urgently requested that the medical profession do not delay in giving this matter their immediate attention, as the smooth working of the law is so frequently obstructed by this divergency in charges.

The physician often complains that his bill is not promptly paid after completion of treatment in compensation cases. The insurance men were asked to explain this fact. Their answer was that the fault usually lay with the doctor, who is notoriously careless in completing the accident report, mailing it promptly and including his bill for services rendered. Instances were related where months and even a year pass by before the insurance company receives the necessary report and bill. Your Compensation Commission, in consequence, urges those treating compensation cases to pay prompt attention to completing accurate accident reports and sending them to the insurance carrier at once, together with the bill. If this is done, the work of the insurance companies will be greatly expedited as well as the payment of the doctor's bill.

In addition to the above, it was not pleasant to learn that cases of padding of bills on the part of the doctor were not infrequent. It is to be hoped that, if such abuse exists in the profession, efforts will promptly be made to stamp out this evidence of irregular practice.

In conclusion, it may be well to draw attention to the fact that often the somewhat strained relationship existing between the medical profession and the insurance companies may have its origin in nonobservance of the law by the physician.

M. A. Slocum.

X-RAY DIAGNOSIS IN MASTOID DISEASE

The clinical symptoms will usually suggest mastoid disease and a skillful examination by an otologist will usually make the diagnosis, but, as has been recognized by Pollitzer, serious mastoid disease may be present and give no definite symptoms. Even though a diagnosis of mastoid disease has been made, much valuable information can be obtained by a skillful x-ray examination.

In all of the leading otologic clinics, an x-ray examination is a matter of routine. If this is desirable in the general free clinic, it surely is equally valuable in all other cases, even though they are not in any way connected with a clinic.

The examination involves no risks, and no pain. In the case of very young children, it is often necessary to give chloroform in order to keep the child perfectly still, but this anesthesia is only of a few minutes' duration. Both mastoids should always be examined and sometimes from several angles. In very young children and in some adults the mastoid cells are undeveloped. These cases require much skill in interpretation. The value of the examination will depend upon the skill in making good roentgenograms, but it will depend even more upon the skill in interpretation.

In the earliest stages of acute mastoiditis one will find a general cloudiness over the mastoid cells involved. One must be cautious and not interpret a fogged negative as disease. In this early stage the cell walls are still preserved and, especially in the pneumatic type of mastoid, some cases will recover without an operation. Operation, however, should not depend entirely upon the x-ray findings.

In the acute suppurative mastoiditis, there will be absorption of lime salts and destruction of the cell walls, either locally or generally, depending upon the extent of the disease. This destruction is most frequently found at the antrum, at the knee of the lateral sinus, and at the tip of the mastoid. In the early stage there will, usually, be some thickening of the anterior wall of the lateral sinus, making it stand out more clearly, but when destruction takes place all evidence of the wall may disappear.

The chronic, or recurrent cases after operation, will usually show considerable sclerosis, and perhaps necrosis or sequestra.

The definite demonstration of the disease, the geography or general character and distribution of the mastoid cells, and the definite location of the lateral sinus will not only help the aural surgeon to decide as to operation, but is of material assistance in performing the operation with skill and success. G. E. P.

THE ETIOLOGIC RELATION OF THE INTAKE OF PROTEIN AND SODIUM CHLORID TO HYPERTENSION

For years this has been a moot question and we heard and read much on the harmful effects of both protein and sodium chlorid as important factors in the etiology of hypertension. During the recent past, interesting and instructive observations have been made on this really important subject. In evaluating the effect of protein on blood pressure, the presence or absence of other signs of disease must be considered. Thus, an advanced nephritic must not be compared with a patient having hypertension of menopause. Newburgh has shown that while large amounts of meat damage the kidneys, no blood pressure changes occur. Excesses of all kinds of food seem decidedly more injurious than a moderate amount of protein in a well balanced diet. Solomon Strause and Sarah A. Kelman report a carefully controlled series of experiments in the Arch. Int. Med., 31 : 151, February 15, 1923, and reach the following conclusions:

(1) In patients with hypertension and with slight or no impairment of renal function, marked variations in blood pressure occur. Such variations bear no relation to the intake of protein food.

(2) In such cases no damage to renal function and no increase in nonprotein nitrogen or urea nitrogen of the blood was found to follow protein feeding up to 150 gm. daily.

(3) In such cases strong stock soup and coffee given daily did not increase blood pressure.

(4) In cases of frank progressive nephritis with hypertension, a diminution of protein intake sufficiently marked to lower the figures for nonprotein blood nitrogen and urea did not cause lowering of the blood pressure. Herman O. Mosenthal and James J. Short in Am. J. M. Sc., 165: 531, April, 1923, note the fact that marked spontaneous variations occur in the blood pressure of all persons. In cases of hypertension a very great diminution of arterial pressure usually occurs during periods of mental and physical relaxation, usually well within half an hour. It is evident that very prolonged control observations are necessary before the true blood pressure in any case can be determined, and furthermore that the conditions under which the effect of diet, drugs or physical measures are judged as to their therapeutic value, must be adjusted with scrupulous care.

There is a general impression that proteins in the diet have a tendency to increase arterial tension, but a review of the literature and experimental data fail completely to support it. On the other hand, through producing obesity, carbohydrates may exert a definite, though indirect effect in increasing blood pressure. The liability of diabetic persons to develop hypertension is well known.

In studying the effect of sodium chlorid on high blood pressure, these authors have made allowance for the spontaneous variability mentioned above. In choosing the patients, those with marked renal insufficiency were avoided, since it seems established that in such cases salt is deleterious and dangerous. The patients were kept in bed for days. After the spontaneous variations for each case of essential hypertension had been recorded, 10 gm. of sodium chlorid were given by mouth or through a stomach tube and frequent blood pressure readings made subsequently. With one exception, a nephritic, the salt produced no untoward symptoms in any of these patients. A spontaneous variation of 30 points blood pressure may occur. The control patient showed a rise of 30 points after the administration of colored water instead of salt. These authors state there is no evidence in literature that sodium chlorid raises blood pressure; the level of blood chlorids bears no relation to the blood pressure.

James P. O'Hare and William G. Walker, Arch. Int. Med., 32: 283, August 15, 1923, make the statement that there is no good reason for the restriction of salt in hypertension except in cases associated with nephritis retention with resulting decreased viscosity of the blood. It is difficult to understand the comparatively low pressure of subacute nephritis and chronic nephritis with edema. Only rarely is hyptertension seen in these cases, and yet they show the greatest retention of salt. If salt is such a determining factor, we should expect to find the blood chlorid increased in hypertension and a definite relation between the level of this substance and that of blood pressure. They conclude that the salt plays little part in vascular hypertension. G. E. H.

BENIGN BREAST LESIONS

In former years, the greater number of breast lesions which came under the surgeon's care, were found to be malignant. The proportion has changed and at the present time the number of benign lesions which come under observation, has gradually increased. This is due to the propaganda, instituted for the purpose of enlightening the public in regard to the danger from malignant disease.

On account of the dissemination of knowledge, the people are becoming aware of the possible danger of neglecting even innocent-appearing lumps in the breast. The patients, therefore, consult physicians at an earlier date than formerly and place the responsibility squarely upon them. This is right and proper, but the duties of the physician now become more exacting and his diagnostic ability may be severely taxed.

The early diagnosis of breast lesions is difficult. This is proved by the fact that in 10 to 15 per cent of the cases where a complete operation for cancer has been done, the lesion has been found to be nonmalignant. On the other hand it is true that many cases regarded as benign have been allowed to procrastinate until the involvement of axillary or supraclavicular glands has rendered a cure practically impossible.

It is therefore imperative that the physician should use every means to improve his diagnostic efficiency; otherwise much of the value of the recent educational effort shall go for naught. The patient naturally feels that she has done her duty when she has reported the condition to her family physician. The physician should be prepared to render a probable diagnosis of a benign or malignant condition, and failing in this he, in turn, should consider it his duty to procure help in establishing a decision.

The early cases are the most difficult; but this is the period wherein the diagnosis is really important and, broadly speaking, the only time that malignant disease may be cured. There is little hope for cure when the disease has reached the stage that "he who runs may read."

The diagnosis of breast tumors depends upon a carefully taken history, plus a competent examination. In the history, the age of the patient, the duration of the growth, married or single, whether or not she has children, whether lactation has been normal, the presence or absence of abscess, disappearing tumor or trauma, should be carefully considered. A history of discharge from the nipple is of importance, in that it usually denotes a benign condition. Pain is not a reliable point, but should be analyzed. A history of congenital retraction of the nipples may avoid confusion.

After consideration of the history, inspection may render valuable aid; the contour of the breast, the presence or absence of scars, a dimpling of the skin, retraction of the nipple, the symmetry and size of the breasts and the presence of any rash, ulcer or eczematous condition, are noted.

Palpation is the most important procedure in the examination and should include both breasts. Palpation should demonstrate whether there is one or several tumors in one or both breasts, the consistency of the breast tissue, evidence of a preëxisting mastitis, fixation of tumor or encapsulation. Palpation must include the axillæ and supraclavicular regions for evidence of glandular enlargement.

Benign lesions of the breast include the physiological hypertrophies occurring at birth, puberty and during pregnancy, abscesses (pyogenic, tuberculous and mixed), mastitis (caking), chronic cystic mastitis, cysts, virginal hypertrophy, multiple tumors (usually simple cysts or intracanalicular myxomata) and galactocele. The group of solid benign tumors comprises the cystadenoma, the intracanalicular myxoma and the fibro-adenoma.

The diagnosis of pyogenic abscess offers no difficulty; it practically always develops in the lactating breast, preceded by an abrasion or fissure of the nipple, which is followed by the classical symptoms of inflammation, enlargement, induration and the hypertrophy of axillary glands. Incision and evacuation of all pus pockets usually results in cure. In the tuberculous abscess, the history shows the lesion to be of long duration, the signs of acute inflammation are lacking, the temperature is low and not of septic type, except in the presence of a secondary infection. Sinuses may be present, the result of a previous spontaneous opening or incision for the purpose of drainage. The demonstration of a tuberculous focus elsewhere in the body is of value.

Mastitis, except during lactation, is not common; therefore if an indurated area does not show a resolution process or abscess formation within a week or ten days, it is best to regard the lesion as possibly malignant, and explore. Mastitis may occasionally occur in breasts which are not lactating, but is rare. Chronic cystic mastitis (Schimmelbusch) is a disease of unknown etiology. It frequently begins about the period of the menopause, is more common in breasts which have not lactated. With the exception of chronic cystic mastitis and cysts, benign lesions are rare after the menopause. Chronic cystic mastitis is frequently bilateral, pain is usually a prominent and may be an early symptom. Pain may even precede the development of palpable cysts. Chronic cystic mastitis may affect the whole breast diffusely or it may be limited to a quadrant or hemisphere. Exploration should determine readily the character of the lesion.

Galactocele is a dilatation of a duct in a lactating breast. Galactocele is due to a blocking of the duct and may be single or multiple. Mastitis is frequently associated with this condition and may serve to confuse the picture clinically. The galactocele cyst, at operation, has a smooth wall and is filled with milky contents.

The varieties of cysts occurring in the breast are the simple cysts (blue dome), the cysts of chronic cystitis mastitis, the papillomatous cyst and the malignant cyst. The simple cyst may be recognized by its spherical shape, its tenseness, its freedom from fixation. It may, however, be so deeply implanted in breast tissue that the above points cannot be readily discerned. Exploration reveals the thin-walled cyst with blue dome and sharp demarcation from breast tissue. The lining of the cyst is smooth, the cavity is filled with turbid fluid. The cysts of chronic cystic mastitis are simple cysts of variable size, but for the most part small and dispersed throughout the breast or segmented breast. The cysts are here associated with the numerous reddish areas of adenomatous hypertrophy.

It is in cases of cyst, with intracystic papilloma that one so frequently gets the history of bloody discharge from the nipple. The clinical findings do not differ essentially from those of the simple cyst, except for the frequently obtained history of a bloody discharge. At exploration, the cystic nature is evident; but upon opening, the papilloma is seen attached to a part of the wall. The contents of the cyst may be serosanguineous or sanguineous. If the surrounding breast tissue is healthy, the sanguineous fluid is not necessarily a sign of malignancy and the complete operation is not indicated.

The benign solid tumors of the breast are the cystic adenomata, the intracanalicular myxomata and the fibroadenomata. The characteristic of this group is the distinct encapsulation, which serves to differentiate it from the malignant type. The cystic adenoma at exploration shows, in addition to the encapsulation, numerous minute cysts throughout the growth. On section, there may be much variation in the gross appearance, and microscopically these tumors often furnish grounds for argument among pathologists. Not uncommonly they are erroneously diagnosed malignant.

The fibro-adenoma differs from the cystic adenoma in the absence of cysts. The place of the cysts is taken by fibrous tissue which, however, may be variable in amount. Confusion may here result where there is a relatively smaller amount of fibrous tissue than there is of adenomatous. The intracanalicular myxoma is a solid, encapsulated tumor and may attain large size. Differentiation from the cystic adenoma and fibro-adenoma is clincially difficult, but upon section, there is an absence of cysts and also of the fibrous trabeculæ, the cut surface having a smooth glandular appearance. Microscopic examination may be necessary to differentiate it positively from the fibro-adenoma.

The chief characteristic of this group of solid tumors is encapsulation and this, together with their capability of enucleation, will usually enable one to decide that the tumor is benign. There are cases, however, which quite overtax the diagnostic abilities of the operator and a frozen section or permanent specimen must be studied in order to establish a diagnosis.

There is a necessity for physicians to familiarize themselves with the symptoms and signs of benign and malignant breast lesions. In the diagnosis of breast conditions, we cannot pass the burden to the laboratory or to the roentgenologist, at any rate, not at the time of the patient's first visit when a probable diagnosis is important. Never, at any time, has the physician been called upon to exhibit such painstaking care in the diagnosis of breast lesions as to-day. While the responsibility is greater, the opportunity of detecting early malignancy is increased. With the patients seeking medical advice at an early date, the diagnostic difficulties of the physician are onerous. It is his duty however, in doubtful cases, to see that the patient has the benefit of an exploratory incision and, if necessary, a frozen section. Do not wait for the classical signs of malignancy, such as, in a patient over 25 years of age, a palpable lump, retraction of the nipple, dimpling or adherent skin and infiltration of surrounding breast tissue. W. E. H.

PIONEER PHYSICIANS OF PENNSYLVANIA

THE LIFE AND CHARACTER OF DR. CHARLES EMMERLING*

J. J. BUCHANAN, M.D.

For more than fifty years Dr. Emmerling served the people of Pittsburgh and served them so well that, for the major part of that time, he was looked up to, not only by the people, but also by his colleagues as the leading physician of the community.

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* Address given at Memorial Meeting of the Pittsburgh Academy of Medicine, December 11, 1923.

Before entering on my own account of the life and works of this great man, I should like to read a letter which I received yesterday from Dr. Adolph Koenig, who was intimately associated with him for many years and who, in this letter, beautifully summarizes his character. Dr. Koenig writes as follows:

> "I regret very much that I may not be at the Emmerling Memorial Meeting of the Academy of Medicine on December 11th, for the reason that I shall be out of the city. My five years' association with Dr. Emmerling gave me ample opportunity to observe and admire his many rare qualities of heart and mind. He was the soul of honor and integrity and the amelioration of suffering was his joy in life.
>
> "If I might venture to criticize his character, I would say that he discharged his duties and looked on life with almost too great seriousness and hence the misfortunes of his patients bore very heavily on his shoulders. Even in his mature age I have known him to pass sleepless nights because of some patient whose welfare was in his care.
>
> "While thrifty and economical he was generous to a fault as I and many others may testify. His numerous patients and hosts of friends will ever remember him with blessings in their hearts."

Dr. Emmerling was born in Rudolstadt, January 31, 1833. Rudolstadt was the capital of the little principality of Schwartzburg-Rudolstadt and the residence of the Prince, who lived there in his castle. I am unable to say how many inhabitants Rudolstadt had when Dr. Emmerling lived there as a boy—certainly not many, for in 1880 it had only between 7,000 and 8,000. It is to be noted, however, that it had then a public library, a normal school, a gymnasium, a cathedral and a picture gallery. It had also manufacturers of porcelain, pianos and bells.

In this educational and artistic environment Dr. Emmerling spent his boyhood. His father was a gentleman farmer, a land-owner and a man of considerable means, a collector of oil paintings and other objects of art. He gave his son a good education in the primary schools, the gymnasium and a five years' course in the Medical Department of the University of Jena. By this latter institution Dr. Emmerling was awarded his degree as a Doctor of Medicine in 1857.

His internship he spent in the Charite Hospital in Berlin, where he devoted most of his time to the parctice of obstetrics which gave him a ground-work in this branch that served him well throughout his professional life. His graduation thesis is on "The Transfusion of Blood." It is written in Latin and dedicated to Edward Martin, the Professor of Clinical Obstetrics in the University of Jena, whom he describes as his "most learned and venerated præceptor."

I am indebted to Dr. Karl Emmerling, his son, for the privilege of studying this inaugural dissertation. It is a remarkable example of research and industry. It gives the history of animal experiments with transfusion, beginning in 1665, and abstracts all recorded cases of transfusion in human beings down to his own time.

The thesis is based on the clinical history of a case of blood transfusion for postpartum hemorrhage which occurred, under his observation, in Professor Martin's service. The history is most accurately taken; the description of the technique of transfusion, as then practiced, clear and distinct; the advantages and dangers well set forth; and the deductions most logically made.

It is a remarkable thing that such a learned thesis could be written in Latin by a man of 24. Dr. Emmerling's knowledge of Latin was the key to French and Italian, in all of which languages he was quite proficient.

Graduating in the same class with him at Jena was Edwin Klebs, who won undying fame as the discoverer of the Klebs-Lœffler bacillus. Professor Klebs and Dr. Emmerling kept up their acquaintance and friendship throughout life and when Professor Klebs visited this country a number of years ago he was Dr. Emmerling's honored guest.

In the near-by town of Frankenhausen lived a young girl named Wilhelmina Lang, whose father had been conscripted by Napoleon as he passed through Germany on his ill-fated Russian campaign. This girl's father, by the way, returned unharmed from this awful journey to Moscow and lived to the ripe old age of 91. One of his sons emigrated to America and took up his residence in Philadelphia. Soon after, his sister Wilhelmina came over to live with him.

Young Emmerling, who had met this girl in Rudolstadt prior to her emigration, followed her over in 1857 when he had finished his hospital course in Berlin. He was then 24 years old. His intention was to practice his profession in Philadelphia. On the ship, however, he met a wholesale druggist of Pittsburgh, named Reiter, who induced him to come here. He did so, but the prospect did not please him here and he was informed that a German-speaking physician was much needed in the town of Butler. He settled in Butler and began his work.

Soon after, Wilhelmina Lang and her brother came to Pittsburgh to live. In the following April (1858) Dr. Emmerling and Miss Lang were married in the German Lutheran Church at Smithfield Street and Sixth Avenue by Reverend Walther, its minister.

Dr. Emmerling was a man of wonderful industry and he fairly lived for his patients; but, in his home circle, he was the devoted husband and father. His wife had but one object in life—to make his home happy and bring up his children as he would wish. She hovered over them as a hen over her brood, and the tie of affection continued strong till the day of her death.

Let me now revert to his work in Butler. It was chiefly that of a country practitioner, who was expected to do everything, under the most trying circumstances, and do it well. Fees were small and money was scarce. He could get country produce by contra-account; but there is a limit to the amount of produce a family can consume. His country trips, which made the bulk of his work, were made on horseback with his drugs in saddlebags behind. He was obliged to furnish his own drugs, and they were carried in bulk with scales and measuring glass to apportion the amount required. Tablets for individual doses had not yet been invented nor had coated pills come into use.

The country roads of Butler County have always been a by-word. Under certain conditions of weather they were passable for vehicles, and then Dr. Emmerling used a two-wheeled sulky which, in winter, is the coldest vehicle ever invented by man. In the early time of his practice he hired a horse for his country trips from a man named Zimmerman, proprietor of the hotel where he boarded. Connected with every hotel in those days was a stable. Mr. Zimmerman asked the Doctor why he did not buy a horse. He replied that he had not the money. Zimmerman then suggested that he buy a horse, saddle and bridle from him for $75.00 and pay for it in small amounts, as he would for horse hire. He also suggested that the horse feed should be furnished by patients who had no cash to pay. This arrangement worked well and before long the horse was his.

Like his father before him, he was always a landowner. He was a keen judge of values—values of men, values of property, values of professional ideas. For property, witness his purchase of his Penn Avenue residence for $6,500, which he occupied for many years and sold for more than $25,000. Witness his purchase of the large tract at Liberty Avenue and Rebecca Street, cut in two by Baum Boulevard, and now covered above by the immense building of the Buick Company and below taken over by the city as a park. Few professional men have had his skill in spying out the trend of business and the tenacity to keep his holdings till they matured.

To return to his life in Butler: He always kept afternoon office hours. His living room he used as a waiting room for patients. He used the kitchen as a consulting room, and this kitchen was always burnished by his wife and ready for his work when the hour came. Some may consider those the days of small things. Human life daily hung in the balance in that kitchen, and better judgment was there exercised than most of us use to-day in much more favorable surroundings.

Dr. Emmerling practiced in Butler for seven years, during which time he practiced almost all the specialties not yet developed. On one notable occasion he was called by two of his colleagues, Drs. Nieman and Braden, and requested to bring his craniotomy instruments to extract a full-term child from a small woman with contracted pelvis. This woman had lost a child before by craniotomy. Dr. Emmerling responded to the call and, instead of craniotomy instruments, took his general operating case and performed cesarean section and saved both mother and child. Remember that this was done prior to the year 1864, prior to any thought of antisepsis and at a period when an intraperitoneal operation was almost equivalent to a fatality. Remember that this was done by a country practitioner without skilled assistants, without any paraphernalia of modern surgery and perhaps against the judgment of his colleagues and the wishes of the patient's friends. Such dauntless courage, such unusual skill should inspire us with admiration for this remarkable man.

On occasions when Dr. Emmerling felt the need of a surgical consultant, it was his custom to call Dr. Albert G. Walter of Pittsburgh. Dr. Walter recognized Dr. Emmerling's ability and invited him to move to Pittsburgh and enter into a partnership with him. Dr. Emmerling was finally persuaded to do this and in the spring of 1864 moved his family and belongings to Dr. Walter's private hospital on Bluff Street, a building which is still standing near the present Duquesne University.

Dr. Emmerling remained with Dr. Walter for one and one-half years, during which time he assisted Dr. Walter in his successful case of laparotomy for ruptured bladder, which was the first abdominal section ever performed for rupture of this viscus and was, indeed, the first deliberate laparotomy for traumatism ever done.

The period of surgical experience which he had with Dr. Walter equipped him well for such surgical work as came his way—closure of harelip, tenotomy for clubfoot, amputation of the breast for cancer and operative obstetrics. His forte, however, was internal medicine, and in this he excelled. Throughout his professional life here, he was the man for physical diagnosis in this part of the country. His first thought was the history of the patient, and this history he took well and digested well. This history, however, was but a preliminary to the physical examination; for he believed most in the evidence of his own sense. To see Dr. Emmerling make a physical examination of a patient was a pleasure and an education. It was a demonstration of power such as few men can give. He was systematic, taking up each inquiry in its order. He was quick, without being hurried. He repeated his manipulations only when in doubt or when he wished to demonstrate a point to others. When he was through, he knew he was through and his conclusions were positive. When the history of the case and the physical examination did not agree, Dr. Emmerling was at his best; for in that case, his powers of deduction and reasoning were brought into full play and he was like a judge on the bench, weighing the evidence *pro* and *con*. Knowing the changes that might occur from day to day, he never failed to repeat some part of the physical examination at every succeeding visit.

Apart from his extraordinary ability as a diagnostician, he had two outstanding traits of character which helped to make him the ideal consultant. The first was his unusually high standard of medical ethics, at a time when professional jealousies were common and most of them based on violations of ethics—even as they were in those early days. There was so much enmity among physicians, due to real or fancied unfair treatment by their consultants that consultations were often avoided to the detriment of the patients. With Dr. Emmerling, however, every man knew he was safe and assured of fair and ethical treatment. The other trait was his unfailing punctuality in meeting his engagements. He was always "on the dot." In these days of automobiles, it is no great credit for a man to be at a consultation at a time agreed on. It was far different, however, when all transportation was by horse and street car. The first forty-five years of Dr. Emmerling's practice was in pre-automobile times.

To appreciate how much effort it cost him to be always at a place at the right time, let me tell you how he apportioned his hours so as to accomplish his day's work. He always ate his breakfast at 7 o'clock and saw his early morning patients before he started on his rounds. This was a trying time, because just a few urgent calls would disorganize his plans for the day. His buggy was at the door and it was a good buggy, of the best make and in perfect repair. His horses also were of the best—strong, well groomed, handsome and, like their owner, always fit for a hard day's work. He always kept more than one horse, but never used more than one at a time, conserving the strength of the other while spending his own strength without stint.

His was no neighborhood practice. His reputation was so widespread that his patients came from the entire Pittsburgh district, and his calls in a day might extend from Turtle Creek and Homestead on the east to Temperanceville on the west, and from Troy Hill and Woods Run on the north side of the river to the Hilltop borough on the south. Dr. Emmerling had the rare faculty of putting his attention on the serious and urgent cases and letting the patients with mild and self-limited diseases await their turn or be seen by others. However far his morning route called him he planned to be home to eat with his family at noon and be ready for his office hours, which were always from 1 to 3 o'clock. He was rarely late because he "planned his work and worked his plan." And what a swarm of office patients he had! They always filled his waiting room and on summer Sundays sat on chairs on the pavement. His son Karl and Dr. Koenig will testify to this, as well as I, who lived for many years a few houses away. When 3 o'clock came, he was off again to see more patients and hold more consultations. At 6 o'clock he was home to his dinner, and then an evening office hour closed the day. He did his reading at night, and he was a great reader. He was a prodigious worker, but not much of a writer. The impress he left on the profession was by personal contact and example.

My first acquaintance with Dr. Emmerling was when I was a student of medicine, and a little later when I was an interne at the Western Pennsylvania Hospital. In those days the service of the staff was quarterly and Dr. Emmerling's service was during July, August and September. The work at that time was almost entirely ward work. There were practically no private rooms and, therefore, the work of the staff was done without money and without price. I can testify that he was there every morning the first thing. He knew those poor creatures with typhoid fever, pneumonia, nephritis and all the manifold conditions from which they suffered. He took a personal interest in them and gave them the same close attention that he gave his private patients in their homes.

His was a great soul, enshrouded in a strong body. His life was a life of service. He died December 27, 1915, full of years and honors; mourned by thousands in this community.

Dr. O. Pine queries: In behavior as well as in manipulation, is not the first requisite of the true physician and surgeon gentleness?

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg. Pittsburgh, Pa.

CANDIDATES FOR 1924 HONOR ROLL

On March 18, 1924, this office had received the annual assessment of 4,926 members; on the same day, 1923, of 4,534 members; on the same day, 1922, of 4,855 members; on the same day, 1921, of 3,401 members; on the same day, 1920, of 2,834 members.

The percentage of 1924 dues received at this office, March 18th, from certain county medical societies is herewith indicated: Wyoming, 100%; Juniata, 100%; Montour, 100%; Bradford, 100%; Sullivan, 100%; Union, 100%; Lycoming, 99%; Adams, 96%; Clinton, 96%; Delaware, 95%; Allegheny, 94%; Clarion, 93%; Greene, 93%; Mercer, 93%; Perry, 93%; Clearfield, 92%; Elk, 91%; McKean, 90%; Monroe, 89%; Center, 88%; Mifflin, 88%; Washington, 88%; Carbon, 86%; Fayette, 85%; Montgomery, 84%; Columbia, 83%; York, 81%; Blair, 80%; Bucks, 80%; Potter, 80%; Schuylkill, 80%; Wayne, 80%; Armstrong, 79%; Bedford, 79%; Huntingdon, 79%; Berks, 78%; Cambria, 78%; Dauphin, 76%; Lawrence, 76%; Indiana, 75%; Luzerne, 75%; Erie, 74%; Northumberland, 73%; Franklin, 71%; Beaver, 69%; Cumberland, 67%; Butler, 66%; Chester, 62%; Northampton, 62%; Westmoreland, 62%; Lackawanna, 61%; Lebanon, 59%; Venango, 59%; Philadelphia, 55%; Lehigh, 54%.

It will be noted that fifty-five of our sixty-three component societies are included in the above list. It may be that as much effort is required on the part of the Secretary of Bradford County to attain 100% with a membership of 49 as is required by the Secretary of Allegheny County to attain 94% with a membership of 1,240. In any event, we are convinced that the good showing of most of the above county societies reflects the effort put forth by a good secretary.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to March 17th:

ADAMS: *New Member*—William J. Barnes, 454 Baltimore St., Gettysburg. *Removal*—George A. Stock from Wabasha, Minnesota, to State Sanatorium, Oakdale, Iowa.

ALLEGHENY: *New Members*—Jesse L. Amshel, Jenkins Arcade; John C. Calhoun, Jenkins Arcade; Frederick T. Hutton, Westinghouse Bldg., Pittsburgh; J. West Mitchell, 422 Frederick Ave., Sewickley; George R. Sippel, 308 E. Eighth St., Homestead. *Removal*—John L. Steffy from Pittsburgh to Culver City, Calif. *Resignation*—Philip E. Schmidt, Pittsburgh. *Deaths*—Herman W. Hechelman of Atlantic City, N. J., February 7th; William S. Ramsey of Coraopolis (Western Reserve Med. Coll., Cleveland, '77), February 15th, aged 68; Robert W. Clark of Pittsburgh (Univ. of Mich., '71), February 26th, aged 76; David R. Evans of Pittsburgh (Univ. of Pgh., '99), March 10th, aged 51.

ARMSTRONG: *Removal*—Laird F. Kroh from Rural Valley to Boarts Bldg., Kittanning; William H. Nix from Furnace Run to Cadogan.

BEAVER: *Reinstated Member*—John L. Miller, Aliquippa.

BERKS: *Resignation*—William F. Bennett, Verona, N. J.; John G. Ziegler, Washington, D. C.; Max M. Teplitz, Hartford, Conn. *Transfer*—Thomas H. A. Stites, Cresson, to Cambria County Society.

BLAIR: *New Member*—C. E. Shope, 1213 Thirteenth Ave., Altoona.

BRADFORD: *Removal*—Estes H. Hargis from Sayre to Rochester, Minn.

BUTLER: *Transfer*—Frank D. Campbell, Butler, from Lawrence County Society.

BUCKS: *New Member*—Raymond D. Tice, Quakertown.

CAMBRIA: *Death*—Albert F. Dunsmore of Barnesboro (Baltimore Med. Coll., 1900), recently, aged 49.

CENTER: *Death*—C. Sumner Musser of Aaronsburg (Jeff. Med. Coll., '80), February 8th, aged 68. *Resignation*—Marvin W. Reed, Denver, Colo., formerly of Bellefonte.

CHESTER: *New Members*—A. W. Gottschall, Embreeville; F. E. Shields, West Chester; *Reinstated Member*—John W. Merryman, Kennett Square. *Death*—W. Wellington Woodward (Univ. of Penna., '05), January 14th, aged 44.

CLEARFIELD: *New Member*—Nicholas F. K. Ake, Curwensville.

COLUMBIA: *Removal*—Allen V. Carl from Numidia to Bloom St., Danville (Montour Co.).

CRAWFORD: *Death*—Clarence E. Spicer of Titusville (Eclectic Med. Coll., Cincinnati, '84), from apoplexy, January 28th, aged 70.

DAUPHIN: *New Members*—Robert E. Barto, Elizabethville; Arthur A. Bobb, Williamstown. *Removal*—Frank L. Shenk from Linglestown to Dagus Mines (Elk Co.).

Delaware: *New Member*—E. Marshall Harvey, Media.

Elk: *New Member*—Helena M. Mullhaupt, St. Marys. *Transfer*—Perry O. Hall, Ridgway, from Cambria County.

Fayette: *New Members*—Maurice Menzalora, Thomas B. Semans, John D. Sturgeon, Uniontown. *Transfer*—Domer S. Newill, Melcroft, formerly of Donegal, from Westmoreland County Society.

Jefferson: *New Members*—William W. Carrier, Summerville; William E. Dodd, Rossiter.

Lancaster: *Reinstated Member*—Harry S. Dissler, Denver (Pa.). *Removal*—Guy L. Alexander from Clayton, Del., to 1 Seneca St., Oil City.

Lackawanna: *New Members*—Herbert E. Simrell, Clarks Summit; Gerald A. Kelly, Jessup; Chauncey D. Miller, 2107 N. Washington Ave.; Clare H. Hanley, 240 Adams Ave., Scranton *Death*—Michael A. Carroll, Scranton (Coll. of Phys. & Surg., Baltimore, '89), Nov. 30, 1923, aged 58.

Luzerne: *New Members*—Luther S. Luppold, White Haven; Frank Venerosa, 103 N. Wyoming Ave.; Wm. V. Coyle, 240 W. Broad St.; William H. Jones, 141 N. Wyoming Ave.; Charles S. Holman, John W. Leckie, 87 N. Church St., Hazleton; Burton C. Rumbel, Conyngham; Harry S. Sewell, Retreat. *Transfer*—Alexander Armstrong, White Haven, from Carbon County Society; Jessie P. Janjigian, Forty Fort, from Montgomery County Society. *Deaths*—Lewis L. Rogers of Kingston (Univ. of Penna., '13), Dec. 21, 1923, aged 35; Sanford L. Underwood of Pittston (Univ. of Penna., '93), Dec. 17, 1923, aged 54.

Lycoming: *Death*—Charles Schneider of Williamsport (Coll. of Phys. & Surg., Baltimore, '81), January 24th, aged 63.

Northampton: *New Members*—Jacob A. Comerer, Bethlehem Trust Co. Bldg., Bethlehem; Claude D. Freligh, 15 N. Second St., Easton.

Philadelphia: *Reinstated Members*—Sophia Nabut, 699 So. Fifty-seventh St.;. Elsie R. T. Reedy, 3101 Midvale Ave, Philadelphia. *Resignation*—Emma W. Brooke, Philadelphia.

Snyder: *New Member*—Sedic S. Rine, McKees Half Falls.

Schuylkill: *New Members*—James M. Monaghan, Minersville; David J. Hawk, Tower City. *Transfer*—Francis S. Bodine, Morea Colliery, from Erie County Society. *Death*—Jonathan C. Biddle of Fountain Springs, March 15th.

Sullivan: *Reinstated Member*—Carl M. Bradford, Canton (Bradford Co.).

Union: *New Member*—Edgar T Shields, 103 Coligni Ave., New Rochelle, New York. *Death*—William Leiser of Lewisburg (Univ. of Penna., '75), February 27th, aged 69.

Venango: *Transfer*—John N. Camp, Oil City, formerly of Foxburg, from Clarion County Society.

Washington: *New Member*—David H. Ruben 39 W. Chestnut St., Washington.

Wayne: *New Member*—Robert G. Barckley, Mulford (Pike Co.).

Westmoreland: *New Members*—Spurgeon S. De Vaux, Mammoth (Mount Pleasant, R. D. 2); William H Robinson, Mt. Pleasant. *Death*—Frank C. Katherman of Whitney (Jeff. Med. Coll., '01), January 23d, aged 48.

York: *New Member*—L. W. Fishel, J. F. Bacon, York. *Reinstated Member*—Horace W. Kohler, Red Lion.

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since February 16th. Figures in first column indicate county society numbers; second column, State Society numbers.

1923				
Mar. 12	Lancaster	130	7344	$5.00
1924				
Feb. 18	Mifflin	22	3395	5.00
	Greene	24	3396	5.00
	Bedford	1-3	3397-3399	15.00
	Delaware	68-72	3400-3404	25.00
19	Montgomery	107-111	3405-3409	25.00
	Potter	9-10	3410-3411	10.00
	Lebanon	1-20	3412-3431	100.00
20	Somerset	23	3432	5.00
21	Lackawanna	1-100	3433-3532	500.00
	Bradford	44	3533	5.00
	Cambria	75-93	3534-3552	95.00
	Union	14	3553	5.00
	Greene	25	3554	5.00
	Mercer	36	3555	5.00
	Chester	1-45	3556-3600	225.00
25	Jefferson	1-24	3601-3624	120.00
	Sullivan	1-6	3625-3630	30.00
	Northumberland	38-44	3631-3637	35.00
	Mercer	37-38	3638-3639	10.00
	Somerset	24	3640	5.00
	Schuylkill	62-85	3641-3664	120.00
	Lycoming	74-83	3665-3674	50.00
	Adams	22	3675	5.00
	Bedford	4-8	3676-3680	25.00
	Venango	22-23	3681-3682	10.00
26	Mercer	39	3683	5.00
	Butler	21-24	3684-3687	20.00
	Erie	44, 45, 58-71	3688-3703	80.00
	Bucks	26-50	3704-3728	125.00
27	Luzerne	140-158 160-163 165-170	3729-3757	145.00
	Erie	46-53	3758-3765	40.00
	Lebanon	21-24	3766-3769	20.00
	Delaware	73-75	3770-3772	15.00
	Franklin	26-28	3773-3775	15.00
	Greene	26	3776	5.00
	Clearfield	27-49	3777-3799	115.00
28	Snyder	1-3	3800-3802	15.00
	Wayne	18-19	3803-3804	10.00
	Bradford	40-42	3805-3807	15.00
29	Philadelphia	1001-1109	3808-3916	545.00
	Mercer	40-41	3917-3918	10.00
	Lycoming	84-98	3919-3933	75.00
	Somerset	25	3934	5.00
	Potter	11	3935	5.00
	Northampton	57-66 68-88	3936-3966	155.00
	Lehigh	25-57	3967-3999	165.00
Mar. 1	Elk	13-16 18-21	4000-4007	40.00
	Center	23	4008	5.00
5	Luzerne	159, 164 171-185	4009-4025	85.00
	Westmoreland	65-73	4026-4034	45.00
	Venango	21, 24-26	4035-4038	20.00
	Union	15	4039	5.00
	Mercer	42-46	4040-4044	25.00
	Bedford	9-10	4045-4046	10.00
	Delaware	76-77	4047-4048	10.00
	Delaware	78	4049	5.00
	Mercer	47-48	4050-4051	10.00
6	Erie	54-57 72-92	4052-4076	125.00
	Westmoreland	74-82	4077-4085	45.00
	Mercer	49-52	4086-4089	20.00
	Delaware	79	4090	5.00
	Columbia	30-35	4091-4096	30.00
	Potter	12	4097	5.00
	Northumberland	45-46	4098-4099	10.00
	Monroe	1-12	4100-4111	60.00
	Allegheny	636-785	4112-4261	750.00
7	Westmoreland	83-85	4262-4264	15.00
	Bedford	11	4265	5.00
	Bucks	51-60	4266-4275	50.00
	Mercer	53-54	4276-4277	10.00
	Lancaster	39-52	4278-4291	70.00
	McKean	32-36	4292-4296	25.00

1924				
Mar. 8	Union	16	4297	5.00
10	Delaware	80-81	4298-4299	10.00
	Mifflin	23	4300	5.00
	Wayne	20-22	4301-4303	15.00
	Venango	27	4304	5.00
	York	1-83	4305-4387	415.00
12	Fayette	61-91	4388-4418	155.00
	Berks	61-105	4419-4463	225.00
	Westmoreland	86-93	4464-4471	40.00
	Blair	59-71	4472-4484	65.00
	Clinton	25	4485	5.00
	Lancaster	53-60	4486-4493	40.00
	Franklin	29-38	4494-4503	50.00
	Snyder	4	4504	5.00
	Adams	23	4505	5.00
	York	84-89	4506-4511	30.00
	Jefferson	25-26	4512-4513	10.00
	Mercer	55-56	4514-4515	10.00
	Venango	28-29	4516-4517	10.00
	Bedford	12	4518	5.00
	Delaware	82	4519	5.00
13	Mercer	57	4520	5.00
14	Butler	25-32	4521-4528	40.00
	Lawrence	3-45	4529-4571	215.00
	Mercer	58	4572	5.00
15	Perry	8, 14	4573-4574	10.00
	Erie	93-104	4575-4586	60.00
	Armstrong	39, 41-45	4587-4592	30.00
	Delaware	83-85	4593-4595	15.00
	Venango	30	4596	5.00
	Lebanon	25-28	4597-4600	20.00
17	Carbon	1-24	4601-4624	120.00
	Schuylkill	86-105	4625-4644	100.00
	Venango	31-32	4645-4646	10.00
	Cumberland	16-23	4647-4654	40.00
	Dauphin	118-120	4655-4657	15.00
	Washington	69-108	4658-4697	200.00
	Lackawanna	101-145	4698-4742	225.00
	Cambria	94-116	4743-4765	115.00
	Mercer	59-61	4766-4768	15.00
	Huntingdon	22-31	4769-4778	50.00
	Butler	33-35	4779-4781	15.00
	Beaver	31-46	4782-4797	80.00
	Clearfield	50-63	4798-4811	70.00
	Dauphin	99-117	4812-4830	95.00
	York	90-93	4831-4834	20.00
18	Indiana	1-48	4835-4882	240.00
	Lycoming	99-111	4883-4895	65.00
	Sullivan	7	4896	5.00
	Fayette	94-102	4897-4905	45.00
	Montgomery	112-129	4906-4923	90.00
	York	94-95	4924-4925	10.00
	Delaware	86	4926	5.00
19	Beaver	47-53	4927-4933	35.00
	York	96	4934	5.00
	Mercer	62-63	4935-4936	10.00
	Venango	33-36	4937-4940	20.00

FREDERICK L. VAN SICKLE, M.D.
Executive Secretary
230 State St., Harrisburg, Pa.

NO NEED FOR ADDITIONAL LICENSING BOARD FOR CULTS

Elsewhere in this issue of The Atlantic Medical Journal will be found a list of newly coined names which have been adopted by practitioners of the various cults. It may be readily seen that these cults are growing from year to year. Up to the last session of the Legislature the only group that applied for legalized recognition were the chiropractors.

We have recently noticed that the naturopathic cult proposes to introduce a bill to create a board of naturopathic medical examiners. Each year, then, we will see new additions to the ranks applying for legislative relief. We quote the following from an editorial in the March 13th number of the *Boston Medical and Surgical Journal*, entitled "Shall Chiropractic Be Recognized in Massachusetts?":

> "The objections to the bill as formulated by the Joint Legislative Committee of the Massachusetts Medical Society and the Massachusetts Homeopathic Medical Society are as follows:
>
> "1. All persons who attempt to heal the sick and restore health should first demonstrate to some competent authority their familiarity with the human body in health and in disease: and their ability to diagnose diseases and comprehend disease processes.
>
> "2. Disease processes are the *same* whether the sufferer is under one form of treatment or another. Whatever the form of treatment, the human body and its diseases remain the same. Therefore the practitioner should know the causes and the courses of diseases.
>
> "3. We propose 'one minimum standard of qualifications for all who practice the *art of healing.*'
>
> "4. There is no need whatever of establishing extra licensing and examining boards. The fundamental medical sciences are broad enough and big enough to support any system of healing. Therefore one examining board is enough. Two boards will needlessly complicate administrative machinery and will also mean *two standards*, and thereby lead to trouble and undesirable notoriety, such as a neighboring state (Connecticut) recently has had.
>
> "5. There would seem to be no necessity for the state to recognize 'chiropractors' as a separate and distinct division of the medical profession.
>
> "6. The petitioners ask for the privilege of examining applicants in the sciences of 'Anatomy, Histology, Physiology, Chemistry, Pathology, and in hygiene, sanitation, and symptomatology.' These subjects the present Board of Registration include in their examinations, and the Board is competent to examine applicants therein.
>
> "7. In the opinion of the protestants there is no need of the proposed legislation.
>
> "8. Applicants ask for legal recognition as a separate and distinct medical fraternity, with *standards admittedly lower* than those now in force for the medical profession; and at the same time they claim superior powers in diagnosing and treating diseases.......The prestige connected with securing the enactment of the proposed Bill 746 is an enviable thing, and would unquestionably prove of great service in establishing the new practice and increasing its popularity."

The people of Pennsylvania will not be protected from those who are endeavoring to practice some form of the healing art without the necessary preparation and training to make them safe until the Legislature provides adequate protection in the nature of a "One Board Law."

It is hoped that we may arouse sufficient interest between now and the session of the Legislature so that every active and interested physician in Pennsylvania will do his bit to aid the

Medical Legislative Conference by informing the senators and representatives from his particular district the reasons why they should vote for the "One Board Bill."

DEPARTMENT OF HEALTH, STATE OF PENNSYLVANIA

INFANT MORTALITY BY COUNTIES IN PENNSYLVANIA

	1922	*1923*
Entire state	85	88
Adams	60	84
Allegheny	91	93
Armstrong	80	81
Beaver	83	84
Bedford	73	102
Berks	88	85
Blair	83	83
Bradford	74	88
Bucks	85	69
Butler	62	74
Cambria	101	97
Cameron	70	70
Carbon	94	97
Center	81	111
Chester	80	108
Clarion	75	71
Clearfield	89	95
Clinton	62	96
Columbia	76	84
Crawford	63	67
Cumberland	74	78
Dauphin	71	83
Delaware	99	81
Elk	79	77
Erie	67	70
Fayette	106	119
Forest	61	61
Franklin	78	73
Fulton	86	78
Green	79	111
Huntingdon	80	90
Indiana	102	94
Jefferson	69	98
Juniata	65	89
Lackawanna	105	96
Lancaster	68	79
Lawrence	85	75
Lebanon	78	104
Lehigh	105	95
Luzerne	97	93
Lycoming	71	63
McKean	65	71
Mercer	75	87
Mifflin	76	112
Monroe	77	75
Montgomery	75	88
Montour	66	96
Northampton	81	112
Northumberland	86	77
Perry	55	84
Philadelphia	81	76
Pike	81	91
Potter	47	105
Schuylkill	110	106
Snyder	74	76
Somerset	83	93
Sullivan	62	68
Susquehanna	78	85
Tioga	57	85
Union	43	54
Venango	61	56
Warren	62	59
Washington	97	100
Wayne	77	59
Westmoreland	89	96
Wyoming	84	109
York	64	69

THE HEALING ART

The following was taken from the *New York State Journal of Medicine* for February 22, 1924:

"How many different systems of health and of healing cults can you name? The *Brooklyn Eagle* of February 15, 1924, contains a list of fifty-nine different methods of medical practice and cures. This list had been compiled by Health Commissioner Frank J. Monoghan as the result of a request that citizens send him information and complaints about irregular medical practitioners. Dr. Monoghan's list is as follows:

'Aero-therapy'
'Astral' healers
'Autothermy'
Beautifier establishments
'Biodynamo-chromatic' therapy
'Blood' specialists
Bone setters
Cancer 'cures'
'Chromo-therapy'
'Christos' (blood washers)
Christian Science
'Chromopathy'
Couéists
Diet-therapy
Diathermy
'Drugless healers'
Electro-therapy
Electrotonic methods
Electric light diagnosis
'Electryonic' methods
'Electro-homeopathy'
'Electronapro-therapy'
'Geo-therapy'
Hypnotist
Hydro-therapy
Herbalist
Helio-therapy
'Irido-therapy' diagnosticians
Kneipp cure
'Leonic' healers
Mental and spiritual healing
Medical gymnast
Mechano-therapy
'Naturologist'
'Natureopath'
'Neuro-therapy'
'Naprapath'
Optical institutes
Obesity curers
'Psycho-analyst'
Patent medicine men
'Photo-therapy'
Physical culture
'Physio-therapy'
'Psycho-therapy'
'Practo-therapy'
'Quartz-therapy'
'Spondylo-therapy'
'Sani-practor'
'Spectrocrome'
Special food faddists
Special drug faddists
'Spectro-therapy'
'Tropho-therapy'
'Telathermy'
Vacuum and serum 'cures'
'Vitopath'
'Zodiac-therapy'
'Zonet-therapy'

"This list does not include chiropractic or new thought. It also totally ignores the old grandmother remedies, and the jumbled advice given by practical nurses, which lack only classification and advertising to be raised into the dignity of cults."

Dr. O. Pine queries: In view of the fact that so many medicos, after they have been presidents of county medical societies, cannot find their way to the usual meetings, might it not be a good idea to provide a special parking quarter for them in the assembly room to be branded as "The Ex-Presidents' Parquette"?

Dr. O. Pine queries: Does not your heart go out to the man who will not accept an official position or a committee appointment where such means merely honor or notoriety instead of real service or work? "Act well your part; there all the honor lies" (Shakespeare).

COUNTY MEDICAL SOCIETIES

REPORTERS OF COUNTY SOCIETIES

Adams—James P. Dalbey, M.D., Gettyshurg.
Allegheny—Lester Hollander, M.D., Pittsburgh.
Armstrong—Jay B. F. Wyant, M.D., Kittanning.
Beaver—Francis H. McCaskey, M.D., Rochester.
Bedford—N. A. Timmons, M.D., Bedford.
Berks—Clara Shetter-Keiser, M.D., Reading.
Blair—James S. Taylor, M.D., Altoona.
Bradford—Stanley D. Conklin, M.D., Sayre.
Bucks—Anthony F. Myers, M.D., Blooming Glen.
Butler—L. Leo Doane, M.D., Butler.
Cambria—Joseph J. Meyer, M.D., Johnstown.
Carbon—Jacob A. Trexler, M.D., Lehighton.
Center—James L. Seibert, M.D., Bellefonte.
Chester—Henry Pleasants, Jr., M.D., West Chester.
Clarion—H. A. Wick, M.D., New Bethlehem.
Clearfield—W. E. Reiley, M.D., Clearfield.
Clinton—Clair B. Kirk, M.D., Mill Hall.
Columbia—C. B. Yost, M.D., Bloomshurg.
Crawford—Cornelius C. Laffer, M.D., Meadville.
Cumberland—Calvin R. Rickenhaugh, M.D., Carlisle.
Dauphin—W. Minster Kunkel, M.D., Harrisburg.
Delaware—George L. Armitage, M.D., Chester.
Elk—Joseph E. Madara, M.D., St. Marys.
Erie—Anna M. Schrade, M.D., Erie.
Fayette—Hugh Ralston, M.D., Uniontown.
Franklin—Samuel D. Shull, M.D., Chamhershurg.
Greene—Thomas B. Hill, M.D., Waynesburg.
Huntingdon—John M. Keichline, Jr., M.D., Huntingdon.
Indiana—H. Boydston Smith, M.D., Blairsville.
Jefferson—W. A. Hill, M.D., Reynoldsville.
Juniata—W. H. Banks, M.D., Mifflintown.
Lackawanna—G. A. Clark, M.D., Scranton.
Lancaster—J. Sullivan, M.D., Lancaster.
Lawrence—William A. Womer, M.D., New Castle.
Lebanon—W. Horace Means, M.D., Lebanon.
Lehigh—Harold E. Hersh, M.D., Allentown.
Luzerne—H Irvin Evans, M.D., Ashley.
Lycoming—Wesley F. Kunkle, M.D., Williamsport.
McKean—Francis DeCaria, M.D., Bradford.
Mercer—M. Edith MacBride, M.D., Sharon.
Mifflin—F. A. Rupp, M.D., Lewistown.
Monroe—Charles S. Flagler, M.D., Stroudshurg.
Montgomery—John C. Simpson, M.D., Norristown.
Montour—John H. Sandel, M.D., Danville.
Northampton—Wm. A. Finady, M.D., Bethlehem.
Northumberland—Charles H. Swenk, M.D., Sunbury.
Perry—A. R. Johnson, M.D., New Bloomfield.
Philadelphia—Franklin M. Crispin, Philadelphia.
Potter—Ross H. Jones, M.D., Coudersport.
Schuylkill—Arthur B. Fleming, M.D., Tamaqua.
Snyder—John O. Wagner, M.D., Beaver Springs.
Somerset—H. Clay McKinley, M.D., Meyersdale.
Sullivan—P. G. Biddle, M.D., Dushore.
Susquehanna—Robert B. Mackey, M.D., Montrose.
Tioga—H. A. Vosburg, M.D., Arnot.
Union—Oliver W. H. Glover, M.D., Laurelton.
Venango—John F. Davis, M.D., Oil City.
Warren—M. V. Ball, M.D., Warren.
Washington—Charles C. Cracraft, M.D., Claysville.
Wayne—Hugh Stevenson, III, M.D., Honesdale.
Westmoreland—D. Allison Walker, M.D., South West.
Wyoming—Herbert L. McKown, M.D., Tunkhannock.
York—Maurice C. Wentz, M.D., York.

April, 1924

COUNTY SOCIETY REPORTS

BERKS—FEBRUARY

The Berks County Medical Society at their February meeting had the honor of being addressed by Dr. Howard C. Frontz, President of the State Society. He mentioned the fact that the Berks County Society had the honor of entertaining the State Medical Society in 1849. As an organization is only as strong as its combined units, so the State Society depends upon the various county societies for its strength. He congratulated us upon having so capable a legislative member as Dr. Ira Shoemaker, who gives willingly much time and effort to the work.

The State Society is aiming to get together the employee, the employer, the insurance company and the physician so as to get the injured man back to his work as soon as possible and with fairness to all. He also called our attention to a new committee of the State Society, which is to study the subject of commercial pathological laboratories and the licensing of laboratory technicians. He also stated that illegal practitioners should not be prosecuted by physicians but by the Board of Medical Education and Licensure.

The Committee on Public Relations is pleased to report more coöperation between the State Medical Society and the Department of Health. He urged more care in keeping records of cases for the benefit of physicians in possible malpractice suits. He anticipates the pleasure of holding the State Society meeting in Reading this year.

Dr. Sondheim urged the importance of periodic health examinations—first, because doctors are neglectful of their own failings; second, because they cannot dispense health successfully unless they possess it themselves; and third, as an example to others.

Clara Shetter-Keiser, M.D., Reporter.

DAUPHN—MARCH

On Tuesday evening, March 4th, Dr. Frank Crozer Knowles, Professor of Dermatology at Jefferson Medical School, entertained the County Society with a lantern lecture on "Common Diseases of the Skin." A lecture of this character, reviewing a special phase of medicine that the general practitioner constantly encounters, was a source of general satisfaction and appreciation. Dr. Knowles in his inimitable way reviewed the common skin diseases, their diagnoses, and the established modes of treatment with a series of forty colored lantern slides which graphically brought out the essential characteristics. The extremely practical nature of the lecture, and the subsequent queries and discussion combined to make the evening most profitable and instructive. W. M. Kunkel, M.D., Reporter.

MIFFLIN—MARCH

The fiftieth birthday anniversary of the Mifflin County Medical Society was celebrated at Lewistown in great style on Tuesday evening, March 4th, with an elaborate banquet, including turkey and all the things that go with that bird on such an occasion, and an especially well arranged program of toasts. There was present the largest assemblage of doctors and guests that ever attended a county medical function.

During the banquet, the anniversary celebration was brightened in a most delightful manner by music, Mrs. S. H. Kern presiding at the piano, and Mr. Joe Wilfert handling the violin. These two local artists opened the after-dinner program with two numbers, vocal and violin and piano, that won well deserved applause.

Dr. V. I. McKim presided as toastmaster, and proved most efficient in that capacity, introducing as the first speaker Dr. Quigley, who brought to the local society the greetings of the State Medical Society, emphasizing the great importance of organization in the medical ranks, adding that practically all modern medical developments are due largely to organization. All medical discoveries have been made practically by the organized regular medical profession.

Dr. Quigley was strong in his denunciation of what he called the half-baked cults, saying that the public should be protected against this danger which is a very real one. The speaker then discussed in rather great detail the value of the State Medical Society to the medical profession, but more particularly to the public. He cited the extreme importance of the toxin-antitoxin treatment which the state is now administering to the children of the state, and stated that "thousands of individuals are now living who would be dead if there had never been such a thing as diphtheria antitoxin, and that the new toxin-antitoxin will now prevent the disease until dread diphtheria will become as rare as smallpox."

Dr. Harmon, the next speaker, told of his early medical life in Mifflin County, having begun his practice in Allensville, and later continued it in Reedsville. In an interesting way he introduced the names of some of the early medical men of the county, mentioning more particularly the names of Drs. Parcels, Dean, Schaeffer, Van Valzah, Mahon, Rothrock, Harshberger, Sterret, Maclay, Hudson, Floyd, Bigelow, Metz, McKim and Wilson.

Dr. W. S. Wilson was the last speaker of the evening, and in a paper that showed a large amount of work and research into the early history of Mifflin County, entertained the banqueters in a most pleasing way. Choosing as his subject, "The Medical History in the Early Days of Mifflin County, up to the Time of the Organization of the Present Medical Society in 1874," Dr. Wilson stated that practically the first, if not the first doctor in the county was Dr. Buck, and it was a rather queer coincidence that this early pioneer established his office just where the Coleman House now stands, on almost the identical spot occupied by the Coleman House ball room, where the doctors were enjoying the anniversary. Dr. Joseph B. Ard was another early medical pioneer, and is now buried in the Methodist cemetery. Dr. James Culbertson, the father of H. J. Culbertson, practiced in Lewistown in 1828, and was a man of more than ordinary ability, cultured in the sciences, especially geology and the classics.

Other names of early medical men mentioned by Dr. Wilson were those of Drs. Cray and William Watson; 1806, Elijah Davis; 1810, Patterson; 1812, Van Valzah and McDowell. The first organized medical society in the county was from 1845 to 1855, and then there is no record of any society organization until the present society was organized, March 4, 1874.

Dr. Wilson closed his most admirable address by eulogizing Dr. Abraham Rothrock, the father of Dr. Joseph Rothrock, the "Father of Pennsylvania Forestry," to whom there will be erected in McVeytown a monument in the near future. Dr. Abraham Rothrock was born in 1806, started to practice medicine in McVeytown in 1835, and was in active practice in Mifflin County for 65 years, dying at the age of 89. Dr. Wilson's address was exceptionally well received, and his paper will be placed on the minutes of the local society.

The committee responsible for this most successful anniversary celebration consisted of Drs. Wilson, Clarkson and McKim. F. A. Rupp, M.D., Reporter.

PHILADELPHIA

February 27, 1924

The President, Dr. F. Hurst Maier, Presiding.

Exhibition of a "Case of Extensive Roentgendermatitis with Malignant Degeneration; Successfully Treated by Electrocoagulation and Skin Grafting": Drs. George E. Pfahler and Chas. F. Nassau.—In 1908 the patient was operated for scirrhous carcinoma of the left breast. Six weeks later there was recurrence, with nodules in the left axilla and supraclavicular fossa. After a year of severe x-ray treatment she was well until 1917, when she came to Dr. Pfahler suffering with malignant degeneration of the skin secondary to radiation. After local electrocoagulations it healed in one year but other places broke out and it was decided to destroy the whole area. This left a raw surface. Dr. Nassau applied Thiersch's grafts after ten days of Carroll Dakin technique. Morphin gr. ½ was used daily preceding the destruction by electrocoagulation. The pain ceased immediately and no morphin was needed thereafter. Lantern slides showed the condition of the patient during the various steps of the treatment.

SYMPOSIUM BY MEMBERS OF THE RADIOLOGICAL STAFF OF THE PHILADELPHIA GENERAL HOSPITAL ON THE ESTABLISHED FACTS RELATING TO CANCER

Dr. J. B. Carnett: "Some Essential Facts on the Early Diagnosis of Cancer of the Breast, Stomach, Rectum and Prostate, and the Value of Radium in Their Treatment."—Dr. Carnett prefaced his paper by lantern slides which demonstrated very good results from the application of radium in the following: squamous cell carcinoma of the nose, cancer of the cheek, keloid, carcinoma of inner canthus of the eye, round cell sarcoma originating in the maxillary antrum extending to the eye, carcinoma of the lip and mouth, hemangioma of the nose, cavenous angioma of the upper lip, cancer of the breast, prickle cell carcinoma of the ear, adenocarcinoma of the parotid, and recurrent carcinoma of the breast with both femurs and pelvis involved.

Dr. Carnett said that a feature among the cases at Blockley is the late stage at which application is made for treatment. Of two hundred cases studied it was found that there is an average of nine months between the onset of symptoms and application for treatment; an average of five months for diagnosis by the physician; an average of two and one-half months for consultation with another physician, making a total delay of 16½ months before the proper treatment is begun. The great need is for alertness in early diagnosis and early treatment. Every potential case should be instructed in the symptoms of early cancer. In 1920, of the deaths over forty years of age, one in twenty died of cancer. In 1923 there were in Philadelphia 2,250 deaths from this disease. Cancer should be looked upon as are acute appendicitis, diphtheria, intestinal obstruction, etc., and receive treatment within 48 hours. Metastasis may occur because of a delay of one day.

In taking up the various common forms of cancer, Dr. Carnett first spoke of cancer of the skin, which, he said, averages 34 months from the onset of symptoms to the administration of the proper treatment. Ten per cent show positive Wassermanns, and for this reason a diagnosis of lues is often made. At the first or second visit a small piece should be excised from the side of the ulcer and examined microscopically. The danger of embolism following excision is overexphasized, and radium may be used before biopsy to render harmless any emboli that may occur. Nine cases of cancer of the penis were treated on an average of nine months for lues. Careful biopsy should be made on such cases, slitting the foreskin if necessary. Thirty-seven thousand, two hundred and fifty persons died in the United States in 1920 of cancer of the breast. Of 29 cases studied, an average interval of 13½ months elapsed from the time a lump was first noticed to the beginning of treatment. Ninety-nine per cent of correct diagnoses are possible in these cases and there is a 50% chance for cure if treatment is begun early. Retraction of the nipple, involvement of lymph nodes, limpling of the skin are not necessary for the diagnosis. If these do occur, emboli are usually present. Eighty-five per cent of lumps in the breast of women over 35 years are cancer, and 15% of the remainder become malignant if not removed. A cystadenoma may conceal the characteristic contour of a malignant growth. Cancer of the stomach constitutes one-fourth of all cancer deaths in the United States and the cases are usually far advanced before symptoms arise. Freedom from any previous gastric symptoms, decrease in appetite, loss of weight, mild epigastric distress, anemia, are suggestive symptoms. If the case showing such symptoms does not clear up in 10 to 14 days of treatment in patients near 40 years, cancer should be suspected and radiograms and fluoroscopic examinations made. Any ulcer or indurated fissure occurring around the mouth, present for two weeks and not disappearing after removal of the causes, should be biopsied. Leukoplakia and watery excrescences are borderline cases. Rectal carcinoma may be often mistaken for hemorrhoids if local or proctoscopic examinations are not made. Appearance of a few drops of blood, diarrhea, followed by constipation, are frequently the only symptoms, and in the stage of diarrhea a diagnosis of colitis is usually made. If on examination a lesion is found, differential diagnosis from tuberculosis and lues should be made by biopsy. Cancer of the rectum is frequent before 30 years of age.

Dr. George M. Dorrance: "The Early Recognition of Cancer of the Mouth."—Failures in the treatment of cancer of the mouth are due to the delay in reporting to the physician until they are well advanced, and to the fact that syphilis is too often blamed. All suspicious ulcers should be treated as potential malignancy, or biopsy should be made of a portion removed with the electric cautery. Hopeless cases are better without treatment except such as is palliative. Opium is always used, and alcoholic injections of the fifth nerve frequently give complete relief from pain. In cases of malignancy in the mucous membrane of the mouth *without* glandular involvement, radium is applied to the lesion, emanation tubes are embedded and the entire growth is fulgurated. X-ray, radium or a radium pack prevents glandular involvement. Block dissection in these cases is not advised. In malignancy of the mucous membrane *with* glandular involvement, the lesion is treated as in the previous cases, and in addition the neck is opened under local anesthesia and radium emanation seeds, or better, needles containing the seeds, are introduced. Block dissection of the whole neck is followed by x-ray and radium emanation. In malignancy of the floor of the mouth the glands have been involved in all cases seen. Radium dental compounds and bare tubes retard the growth. The cases studied show that an early and radical attack is essential. Needles containing the seeds are better than radium emanation seeds in the treatment of enlarged cervical glands. Block dissection and radium and deep x-ray therapy should be employed for enlarged glands. Alcoholic injections of the nerve should be made for relief in hopeless cases.

Dr. Fielding O. Lewis: "Some Established Facts in the Treatment of Cancer of the Nose, Throat and Larynx."—Malignant disease of the paranasal sinuses is comparatively rare, the maxillary sinus being most frequently affected. If treated early the prognosis is favorable. All cases are classified as operable or inoperable as to radium, surgery or electrocoagulation. Palliative treatment is given inoperable cases to save pain and discomfort. The best results are obtained through the combined use of surgery and radiation. A wide opening is made into the cavity and is kept open to admit radium. Malignancy of the tonsils is noted early because of painful swallowing, but is seldom diagnosed, and instead is treated locally, by antiluetic measures or by incomplete removal. The tonsil is very susceptible to radium, but if the growth is extended to the tongue, faucial pillars or pharynx the benefits are not so great. Surface application of filtered radium are made to both neck and tonsil. In four to six weeks the lesion is surrounded by emanation tubes and tubes are inserted into the cervical glands if these are involved. In intrinsic malignancy of the larynx surgery is best when possible, with radium employed postoperatively. Because of the lymphatic supply, extrinsic cancer of the larynx has a less favorable prognosis.

Lantern slides showed cases of the following treated successfully in the manner described above: prickle cell carcinoma of the maxillary sinus and ethmoid; maxillary antrum and upper jaw; tonsil; larynx—both intrinsic and extrinsic. A slide demonstrated the sites of early malignancy of the larynx and Dr. Lewis urged examination by a competent laryngologist of all cases of chronic hoarseness. He then presented a case upon whom laryngectomy had been successfully performed, and who is gaining a remarkable power of audible speech through the use of the pharyngeal muscles.

Dr. Jay F. Schamberg: "Cancer of the Skin; With Discussion of the Etiological Factors." Dr. Schamberg first presented a case of a boy 16 years, showing xeroderma pigmentosum, a disease familial but not hereditary, with consanguinity probably a strong etiological factor. The case has been under his care for 15 years and during that time scores of carcinomata have been removed with cautery, radium, x-ray, curette, etc. These cases at first show a marked degree of freckling, the skin becomes dry, with subsequent telangiectases and malignant growths. They are especially susceptible to the sun, and a lethal termination by lymphatic metastasis is usual before the subject reaches five years of age.

Dr. Schamberg then went on to give the causative factors in malignancy of the skin as: 1, exposure to sunlight (as evidenced by the high incidence of epitheliomata among farmers and sailors and a remarkable freedom among negroes whose skin contains a pigment layer impervious to the actinic ray); 2, x-ray and radium; 3, xeroderma pigmentosum; 4, mechanical irritation; 5, chemical (especially crude paraffin and tar); 6, inorganic—arsenic, when ingested, especially as Fowler's solution, by a small number of susceptible people. The cancer cell develops an autonomous potential growth impulse similar to a parasite, but all evidence with respect to cancer of the skin points against parasitism. It differs from cancer elsewhere in its lower grade of malignancy and the rarity of metastasis.

Slides demonstrated cases of the following: Two cases of basal cell carcinoma of the inner canthus of the eye and nose, one treated with x-ray and one with radium, both successfully: cancer in a papillary mole following injury; senile papilloma developed on a keratosis; rodent ulcer; a case with carcinomatous tendency, showing scores of lesions; Paget's disease; carcinoma of the tongue with syphiloderm (syphilis and smoking are factors in cancer of the tongue. Surgery in these cases should be avoided and electrodesiccation and radium employed); extensive carcinoma of the nose and side of the face treated successfully with radium in 5 months.

Dr. Charles C. Norris: "Radium in Gynecology."—The two most frequent lesions for which radium is used in gynecology are carcinoma of the cervix and benign hemorrhage. Cervical carcinomata may be grouped in five stages: 1, limited to the cervix; 2, borderline; 3, inoperable (because of extension to the bladder or rectum or glands); 4, "frozen pelvis"; 5, recurrences. Of 135 cases only one was seen in group 2, none in group 1. Carcinoma of the cervix is unfavorable because of the vital structures near, the difficulty of access, and the lateness of diagnosis. Radium produces a mild inflammation of the tissues and checks mitosis, with a nuclear breakdown in the cancer cells and a development of young connective tissue cells which in two to five months destroy the carcinoma cells. Early symptoms of cancer of the cervix are hemorrhage following trauma, and a discharge. Early cases should be operated and treated postoperatively with radiation. In borderline cases radium checks the hemorrhage and discharge, the large ulcer is gotten rid of, the cellulitis, pain, even temperature and anemia are overcome and life may be prolonged as much as one year. The more embryonal the type of cell, the greater is the response to x-ray or radium. In group 4 and some of group 3, where the cervix is eaten out and only a thin membrane exists between rectum or bladder and uterus, radium for palliation frequently causes a high percentage of fistulæ, of cystitis or proctitis and should be used with caution. In two forms of benign hemorrhage—myopathic and in small uncomplicated bleeding myomata—radium is 100% efficient. It produces a local scar, oblierates the blood vessels of the tumor and destroys the endocrine-producing part of the ovary. Contraindications are: a tumor larger than a four months' pregnancy, rapidly growing tumor, inflammatory condition of tumor, macroscopically degenerating mass, pressure symptoms, very young women or subjects extremely nervous. Radium is applicable to 30-40% of myomata admitted to the hospital. Only one fatality (and that from peritonitis) occurred in 537 cases so treated. Subsequent pregnancies are possible but rare. Three days' hospitalization are necessary.

The following statistics in carcinoma of the cervix were thrown on the screen, taken from the work of Seuffert, Department of Gynecology, Munich, on 979 cases (groups as given in beginning of paper):

	Group I CURES*	*Group II* CURES	*Group III* CURES	*Group IV* CURES	*Summary*
1. Operation ...	46%	5%	0%	0%	12.75%
2. Irradiation ..	48%	26%	6%	0%	20.25%
3. " (complete course)	80%	36%	11%	1%	42.33%

*"Cures"—after 5 years.

Radium used for palliation caused local healing in 52% of cases. Complete control of hemorrhage was secured in 60%; leukorrhea was checked in 51%. Slight leukorrhea occasionally occurs after radiation.

Discussion was opened by Dr. Henry K. Pancoast, who stressed the importance of coöperation between surgeon and radiologist in the treatment of cancer. Gastrotomy, tracheotomy or colostomy frequently must be employed in conjunction with radium. Early diagnosis is essential. Radiology's progress now depends largely on help from sources such as biology, where the effect of radiation on cancerous tissue can be scientifically studied.

Dr. Eugene T. Leddy said that the only possible hope lies in early recognition and treatment, using all possible sources in group medicine.

Dr. Mangus urged that all patients be given the chance of radiation following operation, citing a case where very good results were thus obtained.

Mary A. Hipple, M.D., Reporter.

PENNSYLVANIA NEWS ITEMS

DEATHS

Dr. James Allen Kirk, of Carrick, died on February 23d, aged 63 years. He was graduated from Columbus (Ohio) Medical College in 1883.

Dr. Samuel R. Kiddoo, of Bridgeville, aged 74 years, died on February 15th. He was a graduate of Jefferson Medical College of Philadelphia, class of 1876.

Dr. Albert F. Dunsmore, of Barnesboro, died recently, aged 50 years. Dr. Dunsmore was a graduate of Baltimore (Md.) Medical College, class of 1900.

Dr. Edmund L. Graf, of Drexel Hill, died on March 4th. Dr. Graf was born in 1877 and was graduated from the University of Pennsylvania School of Medicine, Philadlphia, in 1900.

Dr. Clarence E. Spicer, of Titusville, aged 70 years, died suddenly of apoplexy on January 28th. Dr. Spicer was a graduate of the Eclectic Medical College, Cincinnati, class of 1884.

Dr. David Richard Evans, who was born in 1875, and was graduated from the University of Pittsburgh School of Medicine in 1899, died on March 10th of pneumonia, at his home in Pittsburgh.

Dr. William Stewart Ramsey, who was born in 1856, and was graduated from the Medical Department of Western Reserve University, Cleveland, in 1877, died on February 15th at his home in Coraopolis.

Dr. John McCrystle, of Minersville, who was born in 1855 and was graduated from Jefferson Medical College of Philadelphia in 1875, died on March 15th following a stroke which he suffered several months ago.

Dr. Edgar L. Housel, of Watsontown, aged 58 years, died on February 20th after an illness of about a year. Death was caused by heart trouble. Dr. Housel was a graduate of the University of Pennsylvania School of Medicine.

Mrs. Ellen Duane Davis, wife of Dr. Edward Parker Davis, Professor of Obstetrics in Jefferson Medical College of Philadelphia, died on March 4th at her home in Philadelphia. She was a great-great-granddaughter of Benjamin Franklin.

Dr. Belle A. Schisler, of Philadelphia, who was graduated from the Woman's Medical College of Pennsylvania, Philadelphia, in 1901, died on February 27th, aged 49 years. Dr. Schisler was formerly on the staff of the Woman's Hospital.

Dr. Cornelius P. Paxton, of California, Pa., aged 47 years, died on February 7th at the Pennsylvania State Sanatorium for Tuberculosis. Dr. Paxton was a graduate of the Western Pennsylvania Medical College, Pittsburgh, class of 1905.

Dr. James M. Maurer, of Shamokin, physician for the Susquehanna Coal Company, died of paralysis on March 11th. Dr. Maurer was born in 1862, and was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1887.

Dr. Josephine P. Wheeler Hildrup, of Brookline, Mass., and a member of the Philadelphia County Medical Society, died on February 19th, aged 58 years. Dr.

Hildrup was graduated from the Woman's Medical College of Pennsylvania, Philadelphia, in 1901.

DR. THOMAS J. BYRNE, of Philadelphia, who specialized in ear, nose and throat diseases, died on March 4th. Dr. Byrne was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1899. He is survived by a widow, a son and a daughter.

DR. ROBERT WASHINGTON CLARK, of Pittsburgh, who was born in 1848, and was graduated from the University of Michigan Medical School, Ann Arbor, in 1871, died of pneumonia, following an operation for prostatic disease, at the West Penn Hospital, on February 26th.

DR. CHARLES A. WEIDEMANN, of Philadelphia, died suddenly on February 14th of heart disease, aged 81 years. Dr. Weidemann was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1880. He was a pharmacist and a Civil War veteran.

DR. WILLIAM SPENCER, of Philadelphia, aged 70 years, died of pneumonia on February 13th. Dr. Spencer was a graduate of the Hahnemann Medical College and Hospital of Philadelphia, class of 1887. He was on the staffs of the Children's, St. Luke's and the Hahnemann Hospitals.

DR. JONATHAN C. BIDDLE, of Ashland, aged 70 years, an eminent surgeon of the coal region, died at his home on March 15th. Dr. Biddle was a graduate of Jefferson Medical College of Philadelphia, class of 1877, and was for many years in the National Guard. He spent thirty-six years as superintendent of the State Hospital for Wounded Miners at Fountain Springs.

DR. WILLIAM LEISER, JR., of Lewisburg, aged 70 years, died suddenly on the morning of February 27th from heart failure. Dr. Leiser was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1875, and he also took a special course at the University of Edinburgh, Scotland. Surviving him are his wife, one son, Dr. William Leiser, 3d, of Reading, and one brother.

DR. ALBERT P. FRANCINE, an authority on public health and tuberculosis, died on March 17th in the University Hospital, Philadelphia, after a few days illness. Dr. Francine, who was born in 1873, made his home in Philadelphia. Since October he had been identified with the tuberculosis department of the Veterans' Bureau in Washington. He was graduated from the University of Pennsylvania School of Medicine in 1898. After his graduation he joined the teaching staff of that institution and later became an associate professor of medicine in the graduate school. In 1917 he entered the service of the U. S. Army and rose to the rank of lieutenant colonel. In June, 1918, he saw actual service in the field in the St. Mihiel and Argonne sectors. Following his discharge from the army he was Chief of the Division of Tuberculosis under Dr. Edward Martin, who was Commissioner of Health at that time. A widow and three children survive.

BIRTHS

BORN TO Dr. and Mrs. Samuel N. Park, of Kirkwood, a son, recently, at the Lancaster General Hospital.

DR. AND MRS. RALPH E. PILGRIM, of Harrisburg, have announced the birth of a daughter, Sarah Elizabeth Pilgrim, on March 10th.

ENGAGEMENTS AND MARRIAGES

THE ENGAGEMENT of Dr. A. M. Rechtman and Miss Jerrie Meyers, Philadelphia, has been announced.

DR. SYLVESTER S. KRING, of Johnstown, and Mrs. Sue Kring were married in McKeesport on February 13th.

ANNOUNCEMENT HAS BEEN MADE of the marriage of Dr. John S. Eynon, of Chester, to Miss Charlotte Reilly, in Philadelphia.

DR. IRA E. SLOAN and Mrs. Winifred Evans, of Johnstown, were married recently and are spending the winter in California.

MR. AND MRS. SAMUEL CRANE, of Philadelphia, have issued invitations for the marriage of their daughter, Miss Jean Crane, to Dr. Maurice Morton Rose, on Sunday, April 6th.

DR. J. W. BRUNER and Miss Elsa Riggins, both of Bloomsburg, were married in Philadelphia on March 20th. Mrs. Bruner is the daughter of Mrs. C. O. Riggins, of Jenkintown.

DR. DANIEL M. LANDIS, of Perkasie, and his bride, who was Miss Debbie Gehman of Morewood, left on March 1st for South America, where they expect to spent several months.

DR. AND MRS. GEORGE CLYMER STOUT, of Philadelphia, have announced the engagement of their daughter, Miss Mary Stout, and Henry L. Norris, son of Mr. and Mrs. Francis Cushing Norris, of Germantown. Their marriage will take place in the early fall.

ITEMS

DR. H. J. CARTIN, of Johnstown, is a patient in the Memorial Hospital.

DR. G. EDGAR DEAN, of Scranton, is spending the winter at Clearwater, Florida.

DR. WELLAND A. PECK, of Scranton, is spending the winter in Orlando, Florida.

DR. CLARENCE M. HARRIS, of Johnstown, has been elected a Fellow of the American College of Surgeons.

DR. WM. B. TEMPLIN, of Johnstown, is taking a postgraduate course in obstetrics in New York City.

DR. JOSEPH REPLOGLE, of Johnstown, has returned from a ten days' visit to the Mayo Clinic at Rochester, Minn.

DR. D. A. WEBB, of Scranton, is taking postgraduate work under Dr. Bloodgood at Johns Hopkins Medical School.

DR. AND MRS. J. NORMAN HENRY, of Philadelphia, have returned home after a few weeks' stay at Fort Myers, Florida.

DR. HENRY B. DAVIS, of Lancaster, has been appointed on the staff of St. Joseph's Hospital in the X-Ray Department.

DR. H. H. PENROD, of Johnstown, attended the annual meeting of the Clinical Congress of Physicians held recently in St. Louis.

DR. GEORGE B. KLUMP, of Williamsport, is at the University of Pennsylvania Hospital, Philadelphia, under the care of Dr. David Riesman.

DR. CALVIN C. RUSH, of Johnstown, is taking a six weeks' postgraduate course in the surgical anatomy of the nose and throat at the Harvard Graduate School of Medicine in Boston.

DR. ANDREW GODFREY, of Ambler, has been awarded $5,085 damages in a suit against Jasper Ogden, for injuries received when Ogden's outo crashed into Dr. Godfrey's automobile near his home.

MRS. HENRY D. JUMP, wife of Dr. Henry D. Jump, of Philadelphia, and former assistant director of the Department of Public Welfare in that city, was recently appointed a member of the Board of Inspectors of the Philadelphia County Prison. Mrs. Jump is the first woman to be elected to membership in the Board.

DR. FRANK C. HAMMOND, of Philadelphia, Dean of the Medical School of Temple University, and a member of the Board of Trustees of the Medical Society of the State of Pennsylvania, has been appointed to the Chair of Gynecology in the Temple University School of Medicine, this chair having been formerly occupied by Dr. Wilmer Krusen, now Director of Public Health in the city of Philadelphia.

A portrait of Dr. Charles A. Mills, Emeritus Professor of Neurology in the Medical School of the University of Pennsylvania, was presented to the University recently. It is the gift of Dr. F. X. Dercum, Professor of Neurology in Jefferson Medical College, and himself a Penn graduate. Doctor Mills, who is now 79 years old, was graduated from Penn in 1869, and took up teaching there in 1874. He remained for fifty years and became a world authority on neurology. His portrait will be hung with a group of sixty other famous physicians now in the Medical School building.

After four days of technical and medical testimony and an exhaustive discussion of the ethics of a physician, Dr. John Clinton Boyer, of Philadelphia, accused by John S. Rundgen of making a drug addict of him and unlawfully having in his possession and selling narcotic drugs, was found not guilty on both the indictments. Judge Stern, who heard the case in quarter sessions court, took occasion to reprimand Dr. Boyer for not keeping proper records of those whom he treated with narcotics. Judge Stern also suggested that hereafter when patients require medicines containing narcotics, Dr. Boyer should give them a prescription and send them to a drug store to have it filled, instead of prescribing for it as a physician and then dispensing it as a pharmacist himself.

Dr. Wilmer Kruson, Director of Public Health in Philadelphia, has formed a committee composed of representatives of the State Board of Medical Education and Licensure and medical societies of Philadelphia County, which committee has planned a campaign to rid that city and its environs of quack "doctors." It is the purpose of this committee to investigate the avalanche of complaints received in Director Krusen's office by poor persons who have been victimized, in many cases with the most serious results, by unlicensed "quacks" masquerading as graduates of almost every school of medicine. The investigators are working in direct connection with the Department of Health, and all reports will be turned over to Assistant District Attorney Fox, who will direct the prosecutions.

MEDICAL SESQUICENTENNIAL

Philadelphia on all counts is the logical place for a medical congress in 1926 to commemorate half a century of development in the science of healing. The meeting will be one of the many to be held as features of an "annus mirabilis" for the city that cradled American liberty. The scope of the plans for the Sesquicentennial is still indeterminate, but the doctors leave no room for doubt about their own convention. Annals of medicine in Philadelphia are studded with eminent names that represent some of the finest achievements for the welfare of the race, and it is right that the services of these benefactors of old should be recalled while the results of the latest research in human maladies are published to the world.—Editorial, *The Public Ledger*, Philadelphia, March 2, 1924.

GENERAL NEWS ITEMS

On Thursday night, March 13th, the death of Bernard Cohen, a Baltimore merchant, occurred at Union Memorial Hospital, Baltimore, as a result of an explosion of ethylene gas as the anesthetic was being used during an operation for the removal of a carbuncle from the back of the neck. The explosion stunned six physicians and four nurses in the operating room. This explosion was due to the use of a heated cautery, which was applied in the operation.

THE AMERICAN PROCTOLOGIC SOCIETY

This society will hold its annual meeting in New York City, beginning June 23, 1924. This society has been invited by the British Proctologic Society to meet with them in London early in July. The American society will sail June 28, 1924. William M. Beach, M.D., of Pittsburgh, the first secretary and one of the organizers of the American society, has been requested to prepare an address upon the subject of "The Evolution of Proctology in the United States," to be delivered before both the American and the British societies.

CHANGE IN NAME OF CALIFORNIA JOURNAL

At its last meeting the Council of the California Medical Association passed a resolution authorizing the work previously conducted under the name of *Medical Society of the State of California* to be carried on under the name of *California Medical Association*. Among other matters considered and decided was that of appropriate change in the name of the Journal, and by resolution the Council instructed the editor to change the name of the Journal in some appropriate manner. Carrying out these instructions, with the approval of the Executive Committee, the name of the Journal has been changed, effective with the March issue, to *California and Western Medicine*.

This change at the same time complies with previous action of the House of Delegates and of the Council endorsing coöperation with the states of Utah and Nevada in making this Journal their official organ. Part of the agreement was, that at an appropriate time a more inclusive title would be given to the Journal.

PUERPERAL MORTALITY RATE

There was a gratifying fall in the mortality from puerperal conditions among the 15,000,000 industrial policyholders of the Metropolitan Life Insurance Company in 1923, according to the January *Statistical Bulletin* issued by that company. The death rate per 100,000 for the year was 17.9 as compared with 19.0 in 1922, and 23.0 in 1920. With the single exception of the year 1916, when the rate touched 17.6, the 1923 figures were the lowest ever recorded among the industrial population.

Louis I. Dublin, Ph.D., the Metropolitan's statistician, in commenting on the above figures, said:

"Diseases incidental to pregnancy and childbirth are still an important field for public health work. The mortality can be further reduced by greater emphasis on nursing supervision during pregnancy, at the time of delivery and during the immediate postpartum period. Especially encouraging are the lower death rates last year from puerperal septicemia and albuminuria. The former, in particular, may be brought down still further by the closer attention of obstetricians and health officers to sources of infection."

The decrease in the death rate from puerperal septicemia referred to was from 7.4 in 1922, to 6.9 in 1923. The death rate from puerperal albuminuria and convulsions was 4.2 in 1923 as compared with 4.7 the previous year.

THE BANTING RESEARCH FOUNDATION

The Banting Research Foundation which has recently been created in Toronto, Canada, has defined its purposes as follows: (a) To provide, in the first instance, further funds for the support of the Banting and Best Chair of Medical Research at the University of Toronto. (b) To establish a fund for the adequate financial support of such scientific workers as may have proposed definite problems of medical research, and for whom funds are not otherwise available. Such assistance may be given to persons working in the University of Toronto or elsewhere.

All financial arrangements in connection with the collection and reception of the principal and subsequent expenditure of the incomes of the fund have been vested in a Board of Trustees, the members of which are appointed for a term of three years subject to reappointment at the end of their respective terms of office. Trustees have now been appointed as follows: Sir Robert A. Falconer, Chairman, President of the University of Toronto; Lieutenant Colonel R. W. Leonard, Honorary Treasurer, member of Board of Governors, University of Toronto; F. Lorne Hutchison, Honorary Secretary, Toronto; Rev. Canon H. J. Cody, Chairman of the Board of Governors, University of Toronto; C. S. Macdonald, Esq., General Manager of the Confederation Life Association; W. E. Gallie, M.D., Surgeon-in-Chief, Hospital for Sick Children, Toronto; J. G. Fitzgerald, M.D., Professor of Hygiene and Preventive Medicine and Director Connaught Laboratories, University of Toronto; Professor V. E. Henderson, Professor of Pharmacology, University of Toronto; Mr. John W. Rogers.

The trustees propose to make an appeal to the public for funds in the immediate future. Subscriptions will be welcome at any time and should be made payable to the Banting Research Foundation, Toronto, Canada.

CLINIC TOUR TO EUROPE

The Interstate Postgraduate Clinic Tour to Canada, British Isles, and Paris in 1925 is now being arranged under the supervision of the Managing Director's office of the Tristate District Medical Association. The time for leaving will be about the middle of May.

The tour will consume, approximately, two months' time, and the total cost from Chicago and back to Chicago again will be less than $1,000. This will include all clinic arrangements and admissions and all traveling expenses, except meals on Pullmans in America and tips on the ocean steamer. First-class hotels will be used everywhere and the ocean passage will be on the largest and finest of the new one-cabin ships.

Clinics are being arranged in Dublin, Belfast, Liverpool, Manchester, Leeds, Edinburgh, Glasgow, Newcastle, London and Paris and other points of clinical interest. The clinics will be conducted by the leading clinicians of these cities. The opportunity will be given, subsequently, to visit the clinic centers in other parts of Europe.

This tour is open to members of the profession who are in good standing in their state or provincial societies and their families and friends.

Sight-seeing programs will be arranged, practically every day abroad, including the most scenic part of the countries visited, without extra cost.

On account of the great demand for reservations, applications should be made as early as possible to Dr. William B. Peck, Managing Director, Freeport, Illinois. Preference in the assignment of hotel and steamship accommodations will follow in the order in which the applications are received.

MENTAL HYGIENE DIVISION

The reorganized Mental Hygiene Division of the Public Charities Association of Pennsylvania has just announced the following plan of activity for the next five years:

1. Informing the public through addresses, radio talks, moving pictures, exhibits, literature, magazines and newspaper articles about the nature, extent, causes, treatment and means for the prevention of mental diseases, disorders and defects. The Division will provide competent volunteer speakers to address interested groups of all kinds in any part of the state, each man to choose his own phase of the subject. Among the newer ways for popular education on this important subject, the Division will prepare for distribution to mothers, post card size Mental Hygine Charts, to be distributed and explained by social agencies, whose workers come in immediate contact with mothers, such as visitors for the Mothers' Assistance Fund throughout the state.

2. Promoting remedial legislation and bringing to the attention of the public and proper officials, the essential facts about the prevalence of mental diseases, disorders and defects, and the financial and other needs of the state institutions for the mentally diseased, the epileptic and the feeble-minded.

3. Acting as a Bureau of Information about the examination and treatment of the mentally ill and deficient and about how to use the state institutions already provided for these patients.

4. Promoting the establishment and effective operation of free clinics for mental diseases, disorders and defects, especially in connection with state and other hospitals, courts and prisons.

5. Establishing branches of the Division in the larger cities throughout the state, in order that in those localities the educational campaign may be more intensely and more effectively carried out.

6. Organizing courses of instruction in the recognition of the elementary problems of mental health for groups of teachers, nurses, social workers, visiting teachers, college students and medical students.

7. Conducting studies in various communities to determine the extent of such mental health problems within the borders as mental diseases, delinquency, feeble-mindedness, etc., so as to aid in securing proper treatment facilities for attacking these conditions.

8. Maintaining for general use a collection of the literature on the subject, together with information in regard to the progress made in other states and communities in the care and treatment and prevention of mental cases.

The following are at present on the Executive Committee of the Division: From Philadelphia—Dr. George Wilson, Chairman; Dr. Edward A. Strecker, Dr. E. D. Bond, Dr. A. C. Buckley, Dr. M. A. Burns, Dr. H. C. Carpenter, Dr. William Drayton, Jr.; Dr. F. G. Ebaugh, Dr. F. H. Leavitt, Dr. Samuel Leopold, Dr. S. DeW. Ludlum, Dr. A. J. Ostheimer, Dr. C. A. Patten, Dr. J. H. W. Rhein, Dr. N. W. Winkelman, Dr. E. A. Leonard and Dr. D. J. McCarthy. From Pittsburgh—Dr. George J. Wright, Vice-Chairman; Dr. C. H. Henninger, Dr. W. H. Mayer, Dr. George Smeltz, Dr. C. C. Wholey, Dr. Max Weinberg. From Warren—Dr. H. W. Mitchell. From Mercer—Dr. W. W. Richardson. From Chester—Dr. Adam J. Simpson. This committee will be enlarged by adding representatives from all over the state later on.

Dr. D. J. McCarthy, Chairman of the Division Council, is organizing a state-wide representation which will include laymen with particular interest in mental hygiene as well as additional representatives from the medical profession.

The Medical Director of the Division, on duty since January 1, 1924, at 419 S. Fifteenth Street, Philadelphia, is Dr. Alfred J. Ostheimer, M.D., L. R. C. P. (London), M. R. C. S. (England). He was formerly associated with Dr. D. J. McCarthy in the practice of neuropsychiatry, served as a Lieutenant-Colonel in the Medical Corps of the army during the war, and since, has been in charge of the ex-service men suffering from mental and nervous diseases in this, the Third District of the United States Veterans' Bureau.

Dr. O. Pine queries: Have you not noticed that there are a great many who would never have crossed a broad stream unless some one else had manned a boat or built a bridge for them?

THE

MEDICAL SOCIETY OF DELAWARE

ORIGINAL ARTICLE

RECTAL EXAMINATIONS BY THE FAMILY PHYSICIAN*

B. R. VEASEY, M.D.
WILMINGTON, DEL.

After promising to prepare a paper on the subject of diseases of the rectum, I found it rather hard to decide how I could present this subject in a way that would be really helpful to the physician engaged in general practice. Surely not by entering into a résumé of the symptoms, etiology, pathology, etc., of the various diseases peculiar to this region, which you can all read in your textbooks and medical magazines, nor by describing the many major operations which none of you may care to undertake.

I decided, therefore, that a brief discussion of the common, every-day cases that come to the office of the family physician, with some hints suggested by my own experience in this field of work, might be really helpful and stimulate the general practitioner to do, himself, much of the minor work which he now allows to drift away or refers to the specialist.

First of all, however, I want to make the charge that the family physician, as a rule, is very negligent about making proper examinations of his rectal cases, usually treats them as unimportant, and allows them to drift into the hands of the quack or hobble along as best they can, using the many remedies advertised in the daily press.

I have had many cases coming for operation or treatment, where prescriptions had been given by the family physician, on the statement of the patient that he or she was troubled with piles, without any examination whatever. Frequently these prescriptions would be renewed and used over periods of months or years. Many of these patients evade examination and simply conclude that any pain, protrusion or unusual discharge from the anus means "piles," as this is the only term with which they are familiar to cover ailments in this region.

I had the case of a prominent Wilmington builder who suffered with pain and a sticking sensation in his rectum, was treated by his family physician, without examination, for piles. He developed a discharge of pus, had severe pain on defecation and for hours after. He lost forty pounds in weight and finally took to his bed, when a diagnosis of tuberculosis of the intestine was made. He was brought to my office, and on examination, my finger at once came in contact with the cause of his trouble—a foreign body in the rectum. He said he had never had an examination. Under local anesthesia I removed what proved to be a splinter of wood, which had been lodged transversely, with each end imbedded in the rectal wall. The only explanation he could give of its presence there, was a habit of chewing slivers of wood as they came off at the sawmill, where he might have swallowed this piece. This patient recovered promptly without other treatment, and you can well understand that nothing I could say would save the family doctor from censure in the minds of these people.

Another patient came up from a Maryland town, a young society woman who had been treated for several months for alternating constipation and diarrhea, with a feeling of weight and bearing down in the rectum, with tenesmus and the feeling that her bowels never moved satisfactorily. Neither of the physicians who had attended her had made an examination. She had, herself, discovered a "lump" pressing into her vagina, and with the thought that any unusual lump might mean cancer she decided to slip away from her home town and consult a stranger. By vaginal palpation a tumor the size of an ordinary orange was readily felt. By pressing firmly downward through the vaginal wall it was made to present at the anus and proved to be a round ball of fecal material which had to be broken up and removed piecemeal by aid of forceps.

A few days ago a man came into my office, stepping with great caution, and assisted by his wife. He looked worn and haggard, declined to sit down, and said his trouble was very painful "bleeding piles." He had been prescribed for by his doctor with both internal and external remedies with only temporary relief, had tried the chiropractor, and one of his friends had advised him to come to me. Examination showed no hemorrhoids but very painful fissure of the anus, and he was holding his whole body in a state of rigidity fearing that by some movement he might bring on another one of those frightful jabs of pain. He was too nervous to attempt anything under local anesthesia, so that same day, under ether at his home, I gave him the necessary attention. After entire relief and a comfortable bowel movement both he and his wife harked back to complain of the loss of time and expense of previous treatment, and I was called upon to defend, as best I could, those who had his case ahead of me.

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*Read before the Medical Society of Delaware, Middletown, October 9, 1923.

Disease of the rectum causes the patient much anxiety and robs him of his usual courage. He magnifies the seriousness of his trouble out of all proportion to its importance. He becomes nervous and apprehensive. He will try all the advertised remedies, travel any distance and submit to the most tedious and long-drawn-out treatments with the hope of avoiding operation under a general anesthesia which he has not the courage to face.

A bright business man of Butte, Montana, had an ordinary case of internal hemorrhoids which had worried him for years. A traveling salesman from the East told him that I had operated on his brother in my office, without a general anesthetic, *without pain,* and that he was back at his work in five days. Without hesitation the merchant came directly to Wilmington, was operated upon in my office, stayed three days at the hospital and went directly back home. He had never been East before, but said he could not spare the time from his business to see even the National Capital. Think of the expense and loss of time and the hundreds of good operators he passed on his trip, all on account of his morbid fear of operation.

Many of the most painful rectal conditions come first to the family doctor, and can be easily relieved with great satisfaction to the patient and credit to the doctor. One of these is the external, thrombotic pile, which is nothing more than a blood clot formed in a dilated or ruptured vein in the anal margin, acting as a foreign body on the surrounding tissues and becoming, at times, exquisitely tender. The sufferer from this form of pile, because of its location, attaches much more importance to it than the condition justifies, and consequently appreciates in the same measure the easy relief which may be given him.

He will tell you that a pile has come down and he cannot get it back, while as a matter of course his efforts to press it into the rectum are useless, as it never was an internal pile. Carefully cleanse the tumor, touch a spot on its surface with pure carbolic acid for the anesthetic effect, with a fine hypodermic needle inject a little novocain solution, incise the pile along the line of anesthesia and deep enough to reach the clot, then by gentle pressure express the clot or clots. They will pop out like the pulp of a grape and the tumor will almost disappear. Place a little packing in the cavity, protect by a proper dressing, and bandage, and direct the application of moist heat at home. Remove the packing next day. This gives prompt relief. For protection against a recurrence of this trouble the sphincter should be stretched or incised under a proper anesthetic.

Another class of cases that should be relieved by the general physician is that of "itching piles." A patient will come in saying that he has had piles for years, that they do not protrude or bleed but that his are the "itching piles." Why do you call the trouble piles when you say there are no protrusions?" "Oh, well, he had described his trouble to his doctor, who said it was piles," and gave him a prescription for "cones." "Have you ever been examined?" Usually the answer is, "No." Pruritis ani is a most distressing condition. The sufferer gradually drifts from having irregular itcing about the anal region at night into a chronic condition which becomes most annoying and often the itching is so intense that the sufferer will continue to scratch even though he knows blood is being drawn by his nails. Without going into the etiology or pathology of this condition I will suggest a line of relief until the case can be taken up seriously for permanent cure. In nearly all cases there is excessive moisture around the anal region, with little infected abrasions and pustules, contraindicating the use of an ointment. Direct the wearing of a pad of absorbent cotton powdered with an antiseptic powder, like bismuth-formic-iodid-comp., held on by a bandage and changed as often as it becomes moist. After several days, when the moisture has been dried up, apply the following very stiff ointment:

℞
Thymol. Iodid, dr. ss.
Lanoline
Pulv. Zinc. Ox.
Ung. Hydrarg. Nit., āā oz. i
Misc; fiat ung.

This ointment should be kept constantly applied and the clothing protected by a covering of oiled silk and a bandage. While these pruritic conditions are often a part of a general neurosis and must be so considered finally, the above simple treatment will go a long way toward making life livable for the patient and call down blessings upon the head of the doctor who has given the relief.

Now-a-days we are searching every nook and cranny of the human anatomy for foci of infection, and rightly so. But while we have tried and convicted the teeth, the tonsils, the cervix uteri, etc., I am afraid we have failed to give due attention to the most extensive and vulnerable of all avenues for the entrance of germs—the colon.

This, as a matter of course, is very natural because of the difficulty in inspecting this organ. It was only a few years ago that I was taught how to introduce the sigmoidoscope to inspect the colon properly, without giving the patient a great deal of discomfort. Examining in this way, with good illumination, a case of colitis or proctitis, with its large extent of inflamed surface, one can readily realize how easily infection may enter by this field.

At the September meeting of the New Castle County Medical Society Dr. Henry A. Cotton gave us a most instructive résumé of the remarkable work being done for insane patients under his direction at the Trenton State Hospital. In the course of his lecture he laid great stress on the lower intestinal tract as a source of infection, and exhibited on the screen a vast number of specimens and statistics showing the results of surgical treatment of the colon and rectum for the cure of insanity.

Now, while the family physician is not expected to be equipped to make examinations of this tract he can make the diagnosis of beginning colitis or proctitis from the symptoms, and will be starting the right treatment when he orders copious, *hot* saline enemas.

I often hear nurses speak of giving "high enemas." They introduce the whole length of a rectal tube believing that it passes up into the descending colon, while, in reality, it simply coils up in the rectum, as it is almost impossible to pass a soft rubber tube over six to eight inches above the anus. The proper way to flush the colon would be: patient in knee chest position, fountain syringe three feet higher than the patient, and a pitcher of normal saline solution of not less than 100° F. By a little patient practice two or three quarts may be gently introduced, insuring flushing of the lower colon.

Many of your neurasthenic cases, suffering from intestinal stasis, dry form of catarrh, gas distension, insomnia, melancholia, rheumatism, arteriosclerosis, etc., may be greatly benefited by proper, systematic flushing of the intestinal tract in this way.

Fistula is another condition on which the family physician often "falls down." A patient comes in with an area of redness, swelling, and tenderness somewhere within an inch or two of the anus. He will refer back to a time when he had a fall or a kick, or sat down on some hard substance, bruising a spot in this region. He will lay the cause of his present trouble to this incident. The doctor will order the application of a salve or poultice, and the patient may go on for a week or more before the abscess "breaks" on the outside. Then after another week of poulticing the skin opening closes and heals over. Apparently it has been a simple abscess or boil. But the cure is short-lived, for soon there is a recurrence, the cavity fills up as before, the poultices must be renewed, the skin wound reopens and discharges pus. Then the doctor is again consulted and begins to think about fistula. If he introduces a probe he finds it extends all the way up into the rectum. I have never attached much importance to the external injury idea as the cause of fistula. In almost every case of ischiorectal abscess the infection has entered from an abrasion on the rectal wall and the pus has gravitated downward, outside of the rectal wall, following the line of least resistance, and finally pointing under the skin. Nearly all will be found to be blind internal fistulæ, that is with an internal opening, before the outside opening occurs. If left to find its way to the surface under poultices, etc., the pus may burrow around in any direction, forming one or several openings which may be far away from the anus, requiring a long incision when finally the fistula operation is done.

Now as soon as it is determined that an abscess has formed it should be opened at once at a point as close to the anus as will properly drain the abscess, and a drain introduced to keep it open until the time for complete operation. I have a case now coming to my office for post-operative treatment in which the fistulous abscess had been allowed to open spontaneously, where it had burrowed down the back of the scrotum, opened in four places on the skin, and broken through into the urethra, causing a leak of urine to mix with the discharge of pus, resulting in a most distressing condition. Now, if the first physician consulted had opened the abscess at the point of election as near the anus as possible and placed a little gauze drain to keep it open, the result would have been a short, straight fistula, with an opening in the rectum just above the external spincter muscle and the one made by the knife through the skin, requiring a simple operation to lay the whole tract open; whereas, leaving it to its own devices results in a condition which taxes all one's surgical ingenuity at the time of operation, and the healing is long drawn out.

Anal fissure causes great suffering. The patient will tell you of blood on the toilet paper after a bowel movement, of a small pile which does not "go back," of excruciating pain at the time of defecation, and deep aching for hours after, of constantly taking laxatives to keep the bowel contents fluid. With this history you will almost always find a fissure. There may be hemorrhoids also, but above all else never attempt to introduce a finger or speculum into the rectum in the presence of fissure of the anus without an anesthetic. There is nothing which causes keener suffering and your patient will remember it against you for years. By gently separating the buttocks you will usually see the small "sentinel" pile in the verge of the anus and extending from this, up toward the rectum, the inflamed groove or fissure. Sixty minims of quarter per cent solution of apothesine and adrenalin injected under and around the fissure, subcutaneous incision of the external sphincter, gradual divulsion of the anal margin and this followed, at home, by the application of moist heat will do the trick. If you do not wish to attempt the operation and prefer to advise temporary relief there is nothing which gives more comfort than a flaxseed poultice and a hot water bottle. Salves and suppositories are useless.

Without consuming time, then, with further details I beg to urge that each patient should have some form of examination before a prescription is given. It is an easy matter to slip on a rubber glove or finger cot and with the patient lying on his side with knees drawn far up, quickly explore the rectum and by sense of touch discover if there is any foreign body, impacted feces, or gross lesion such as cancer, which, if neglected, would jeopardize the health or life of the patient. To prescribe treatment for a case for weeks without examination and then have the patient pass into other hands and find that much time has been lost with improper treatment always does injury to the prestige of the family doctor.

The class of cases briefly mentioned above and many other rectal conditions the family physician can treat, or at least start their treatment along proper lines, with much credit to himself and comfort to his patients. If, however, he is not enough interested in this field of work to make an intelligent examination, he had better refer the case at once and at least have the credit of leading his patient into the proper channel for cure of his disability.

Industrial Trust Bldg.

DISCUSSION

Dr. J. W. Bastian (Wilmington, Del.): I desire to compliment Dr. Veasey on his excellent paper in that it was both interesting and instructive. No doubt a large majority of us either fail to make as many rectal examinations as we should, or do not make them as thoroughly as we should. I recall the case of a relative of mine in New York who had some rectal trouble. His family physician treated him for quite a while and it seemed almost impossible to get his bowels to function properly. I do not know whether his physician examined him, but after I got to probing I found a small skewer in the rectum. He did not have the least idea how it got there, unless he swallowed it while eating soup. That man no doubt would have died if I had not found the obstruction in the rectum.

A few years ago a woman came to me who had chronic constipation, and went days and days without a bowel movement. She had taken an enormous amount of drugs at different times and a great number of enemata. In examining her I found a mass, 3 or 4 inches in diameter, with a hole about the size of your little finger. The enema tube had pierced a hole through the hard matter, and by means of my fingers I removed about a quart of this hard-packed stuff that had been there for weeks.

I do not agree with the Doctor about the use of high enemas. I do not think that a constipated person could get as good results with a little enema as with a high one. The point I want to emphasize most is the importance of trying to overcome the physician's and patient's modesty, and certainly paying more attention to that part of the anatomy. Gloves can be used now, which makes it less objectionable.

Dr. J. H. Niles (Townsend, Del.): I should like to report briefly a case of mine which rightly comes under rectal conditions. Last summer a year ago a colored man came into my office and complained of constipation. I gave him a minor laxative and he came back with no results, so I gave him something a little stronger and he came back a second time with no results. Then I resorted to several enemas, but nothing happened. By this time the boy was so sick he could not leave the house, and I then called on the patient and made an examination of his rectum. As I inserted my finger in the rectum I came in contact with something very hard, resembling a sunflower. It covered a large area, about two or three inches across. I began to pick and pick at this, and to my surprise removed a watermelon seed. Without exaggeration, before I was through I removed a half tin basinful of these seeds.

Dr. C. P. Noble (Philadelphia, Pa.): I wish to compliment Dr. Veasey on his paper. There are only two points which I want to discuss. One time at a sanitarium I was asked to examine the insane patients, and all of them suffered from constipation in one form or another. By looking at a person you can tell the condition of his rectum. A person that has chronic constipation is rather red and bloated in the face, with parched lips and quite often broken out in red splotches. To examine such cases, shyness on the part of the patient is to be overcome, and some doctors do not go about it in the right way.

As regards enemas, most people use warm water with soap or salt in it, which in the cases of chronic constipation is injurious. You make it more obstinate by stretching the bowels and making them spongy. The method which I use in most cases is "tap" water; in the summer time about 65 degrees. If you wash your face in warm water there is no reaction, and it is just the same with the rectum; a small amount of cold water will produce such a shock upon the nerves that it will make an ascending effect and the water goes up to the ileocecel valve and comes down the colon in a normal way and leaves it in a natural condition.

Dr. Ira Burns (Wilmington, Del.): Dr. Veasey failed to give one means for relief. After the enemas fail, as they sometimes do, the x-ray treatment has been exceedingly successful in quite a number of cases after the cause is removed, whatever it may be. One case I am interested in that Dr. Veasey treated, is a man who had itching for a number of weeks, and as a last resort they applied various ointments, but after three treatments of the x-ray he had no further trouble. The treatment given is not the deep x-ray treatment, but the simple treatment such as is given to skin conditions. With reference to the rectum being filled by enemas or any solution at home, I do not know, but in our office we see the enema given and know definitely when the rectum is full. We can successfully fill the bowel to the ileocecal valve without the long tube, but by the short tube, about 2 or 3 inches long.

Dr. A. Robin (Wilmington, Del.): With reference to constipation, I am of the opinion that no case of chronic constipation should be treated without an x-ray examination. If you will remember one cause of constipation is some abdominal condition; another is a spinal condition; another is purely rectal, none of which can be properly diagnosed without the x-ray. With regard to tubes, I have never been able to pass a soft rubber tube beyond the rectum; it either stops or doubles up.

EDITORIAL

GOOD LORD, DELIVER US!

Every now and then one comes across a set of State Board questions that contains rich food for thought. The Delaware examinations for medical licensure have earned for themselves and the examiners a reputation for fairness that reflects creditably upon our little state. Our Board is not considered one of the "stingers" nor is it one of the "cinch" boards either, but a perusal of their work for the past few years will show, in both questions and markings, an earnest effort to give all applicants a fair examination and a square deal. That our standard is at least the average for the country is evidenced by the number of states that grant reciprocity on the basis of the Delaware examinations.

So far, so good, but let us not be blind to our occasional defects. In the examinations of 1922 one of the questions in materia medica was, *"What is piperazine, and what are its uses?"* This remedy is not official, no instruction had been given in the medical schools on it, and the detail man from Merck was about the only one who had ever heard of it. It was thus as unfair a question as could well be imagined. We had occasion to call attention to the matter editorially in the *Delaware State Medical Journal* for June, 1922, wherein we pointed out that an examination must be fair, practical and comprehensive, and concluded as follows:

"Whatever it is, our knowing does not stamp us as brilliant medicos; and our not knowing does not mean that we are unfit to practice medicine. And as these examinations are held to determine whether applicants *are* fit to practice medicine, such trick or catch questions have no place on the questionnaire—they are neither fair, nor comprehensive, nor practical. As a matter of fact, in the words of the street urchin, they are nothing but 'durn tommyrot.' As to this particular enigma 'piperazine,' if the question was put in all seriousness, we can only say that the examiner is out of tune with the times. We would much prefer to believe that the question was put somewhat humorously, just to see how the young bloods would bull through, yet even here we must admit a state board examination is a mighty poor place in which to play jokes. We devoutly hope that 'piperazine' and all that he stands for will never appear again in our midst."

But, we are sorry to admit, he has appeared again in our midst, with all his pristine asininity, as witness the following from the December examination in hygiene: *"What are the ingredients of roast-beef hash, and state as to its nutritive and keeping values."* Now suppose we give the correct answer to this absurdity, as follows:

Ans.—The ingredients of roast-beef hash are weird and wonderful. Poets have wasted reams of perfectly good paper describing said admixture and its luscious flavor; historians have written eloquently of the descent through the ages of this hoary edible; economists have noted at all times the financial independence of those who indulge quite freely; and scientists have declared over and over again that it compares quite favorably with pea soup in consistency, which is a virtue. It is called beef because it generally consists of left-over potatoes and water, with a dash of milk, and a sprinkle of salt. Its nutritive value varies as much as the price of a German mark; in fact, there are hash foundries on Delaware Avenue where the nutritive value is almost as high as the original potato; while on East Fourth Street can be found similar establishments where the nutritive value has about reached the vanishing point. Much might be said as to its keeping values; in fact it has been known to keep from Tuesday dinner to Sunday breakfast, which is going some. In keeping values it is probably unequaled by any other dish.

The above answer is not facetious; it is the gospel truth, and yet the poor applicant who would dare to write such an answer would be promptly flunked on general principles. Yet this question actually was included in the examination. Is such piffle fair? Is it practical? Is it comprehensive? Most assuredly not. To illustrate again what ridiculous questions may be asked, we quote from the December examination in chemistry: *"What poisonous chemical do the berries of the Virginia creeper contain, and what are the antidotes?"* We are under the impression that the medical schools do not teach botany, and we confess frankly our inability to identify drugs by their botanical origin, yet we modestly admit we think we know enough to practice medicine without being a menace to the state. If we were to answer the above, we should have to reply that the Virginia creepers we have most encountered were the kind that woke you up in the middle of the night with a scratching motion, and we implore the examiner to tell us the antidote, for we may be traveling that way again.

If a final proof of absurdity were needed, here it is, from the examination in chemistry of the year previous: *"What is the percentage of lead in a tin can?"* Manifestly, the only possible answer to such frivolity is: Just as little as the American Can Company can get away with. But just think of such questions! *Horrors!!*

Our Board *must* be kept above ridicule. Small though we are, we are proud, and the Medical Society, as judged by the undercurrent at its last session, is determined to clean house, and sweep out such rank incompetency as has been instanced above. A word to the wise is sufficient. W. E. B.

PERSONAL

Dr. Henry W. Briggs represented this state at the meetings in Chicago, on March 3-5, 1924, of the annual congress on medical education, medical licensure, public health, and hospitals, taking an active interest in the programs. At the conference on medical education and licensure he presented a paper on the "Present Opportunities for Medical Study in the United States," which was well received, and which elicited a full discussion of this subject.

Dr. Jacob S. Keyser has just returned from a period of study in Europe, lasting nine months. Most of his work was done in Vienna, but he studied also in Halle, Berlin and London. Dr. Keyser believes the Viennese system of teaching postgraduate courses has not been equaled elsewhere, either in quantity or quality. He will confine his practice in the future largely to gynecology and obstetrics.

MISCELLANEOUS

"CHIROPRACTORS CLAIM RIGHT TO PRACTICE IN THE CITY HOSPITALS"

Under this caption the *Jamestown* (N. Y.) *Journal* of February 7th gives a detailed account of a hearing before the city board of public welfare at which several chiropractors demanded the right to send patients to the city hospital and to treat any already there and desiring chiropractic treatment. "For two hours," says the *Journal*, "the 'back breakers' argued with members of the board and health officials, finally leaving when they were assured that the board will seek legal advice on the possibilities of allowing the hospital to be used for chiropractic treatments."

It is easy enough to understand the apparent lack of a sense of the fitness of things which prompted the chiropractors to present their demands thus openly, but not so easy to understand how they could hold the attention of an official board for two hours.

According to Mr. George W. Whiteside, counsel of the State Medical Society, there is no question that chiropractors who practice what they are accustomed to call their "profession" are doing so in violation of the law of the state. "Chiropractic," he says, "is scientifically unsound and should be fought as a plague—its practice here is a crime which no political expediency can condone."

Assuming the correctness of this opinion, to permit them to practice in a public institution would be making the institution an instrument in the violation of the laws of the state.—*Exchange.*

Francis Brandt, D. C. Harry Wallerstein, D. C.
Editor Asst. Editor and Bus. Mgr.

THE CHIROPRACTIC STANDARD
52-54-56 Garden Srreet
Brooklyn, N. Y.
Phone Stagg 5874

December , 1923.

Dear Doctors:

You will welcome the announcement that the "Chiropractic Standard" is now an established national Chiropractic weekly newspaper. It is an absolutely independent Chiropractic newspaper of the Chiropractors, for the Chiropractors and by the Chiropractors. It is serving the necessary function of acting as a center for dissemination of truth in the Chiropractic world. It is standing back of every sincere move for the promotion of Chiropractic.

We are offering you a medium to announce and to publish all the news of examinations, etc., to the Chiropractors, the colleges and the students. You are welcome to have any reasonable space to tell of the activities of the board, without charge. We would also be pleased to receive a copy of the law and the rules and regulations as affecting Chiropractic in your state. In addition, if it is not against the rules, would appreciate a copy of the examination questions of the past for publication in our paper.

Any service that we can render is yours.

Thanking you for your courtesy,
Yours Chiropractically,
The Chiropractic Standard.
Per Francis Brandt, D. C.,
Managing Editor.

THE QUACK

Dr. Frank Crane has become a household name in many parts of the country, and the following syndicated article which appeared in the *New York Globe* is reprinted as being typically full of sane common sense and good judgment. We have taken the liberty of emphasizing by bold face type those sentences deemed most important.

"A man writes me from Missouri objecting to the statement made that medical science offers no sure cure yet for cancer.

"'I had a cancer back of the ear for ten years. Last September the ear itself became almost separated from my head and an eminent specialist in St. Louis advised x-ray, surgery, and radium in succession. He said if these treatments proved unavailing he knew of no external or internal remedy that could avail, that I might live a few years in extreme distress, but beyond that there was little hope.

"'This specialist failed to frighten me to death and I went to a so-called quack, who made two applications externally, and in ten days' time the cancer took on the appearance of a healing carbuncle, and within a month had grown over completely with new skin. To-day the only sign of the cancer is a depressed surface where it once was.

"'It is a pity that the lack of a diploma prevents this quack from being recognized professionally.'

"This letter calls attention to a point that is not generally clear. It is quite the fashion to abuse the medical profession. Regular doctors sometimes fail and the patient is cured by some irregular practitioner, by some faith cure or fad, or by some old woman. This is hailed as a triumphant proof that the medical profession is a fraud.

"It is bad reasoning, because it is based upon a particular instance.

"The medical profession makes no claim to heal all diseases, nor, in fact, to heal any disease at all. All it claims is to bring as near as may be the sum total of intelligent investigation, experience, and skill toward assisting nature's recuperative power. That is all any doctor can do, and that is all any honest doctor says he can do.

"Nature itself does the curing. The doctor helps. And as a rule a well-educated and trained doctor helps more than a quack, for the simple reason that he is better educated, has had wider observation, and is more responsible.

"Regular physicians assist in the apparently miraculous recovery of thousands of patients; but as a rule they do not advertise it. The quack cures one here and there, and blows his horn insistently.

"Of course, there is egotism, dogmatism, stupidity, and all other forms of human weakness among regular physicians, because they are human. **But if there is anything the matter with you, you are by the law of averages and the rules of common sense much more likely to get well if you obtain the services of a man well trained in the medical schools and of good standing in his profession than if you consult a quack."**

(Copyright, 1923, by Frank Crane.)

BOOKS RECEIVED

Ophthalmoscopy, Retinoscopy and Refraction. By W. A. Fisher, M.D., F.A.C.S., Chicago, Ill., Professor of Ophthalmology, Chicago Eye, Ear, Nose and Throat College. With 248 illustrations, including 48 colored plates. Published by W. A. Fisher, M.D., 31 North State St., Chicago, Ill.

Textbook of Psychiatry. By Prof. Dr. Eugen Bleuler, Director of the Psychiatric Clinic, Zurich. Authorized English edition by A. A. Brill, Ph. B., M.D., Former Assistant Physician of the Central Islip State Hospital and Assistenzarzt of the Clinic of Psychiatry, Zurich. New York: The Macmillan Company, 1924. Price $6.00.

The Biology of the Internal Secretions. The endocrine factor in development, in subnormalities, in neoplasms and malignancy, in nervous and mental diseases and in heredity. By Francis X. Dercum, M.D., Ph.D., Professor of Nervous and Mental Diseases in the Jefferson Medical College. Philadelphia and London: W. B. Saunders Company, 1924.

Operative Surgery. Covering the operative technic involved in the operations of general and special surgery. By Warren Stone Bickham, M.D., F.A.C.S., former surgeon in charge of general surgery, Manhattan State Hospital, New York, former visiting surgeon to charity and to Touro Hospitals, New Orleans. In six octavo volumes, totaling approximately 5,400 pages, with 6,378 illustrations, mostly original, and separate Desk Index volume. Volume 3, containing 1,001 pages with 1,249 illustrations. Philadelphia and London: W. B. Saunders Company, 1924. Cloth, $10.00 per volume. Sold by subscription only. Index volume free.

BOOK REVIEWS

THE MEDICAL CLINICS OF NORTH AMERICA. November, 1923. Boston Number. Vol. 7, No. 3. Philadelphia and London: W. B. Saunders Co.

This number of the Clinics contains articles of much practical value. Dr. Joslin, Dr. Root and Dr. Shedd contribute papers on Diabetic Coma. Dr. Fitz discusses the Treatment of Diabetes Mellitus and Dr. Gray, Blood-Levels in the same disease. Dr. Minot deals with Low Carbohydrate Diet in the Treatment of Migraine and Headache. Other articles are as follows: Clubbed Fingers in Congenital Heart Disease, by Dr. Christian; the Diagnosis of Heart Disease, by Dr. Pratt; Mitral Diastolic and Aortic Systolic Murmurs, by Dr. Wood and Dr. Waite; Myocarditis, by Dr. Reid; Myocarditis in Youth, by Dr. Berry; Ruptured Aneurysm, by Dr. Jackson; Diseases of the Gall-Bladder, by Dr. White; Gall-Stones, by Dr. McClure; Toxic Hepatitis, by Dr. Brown; Infectious (Catarrhal) Jaundice, by Dr. Jones; Fistula of the Esophagus, by Dr. Davidson and Dr. Mills; Carcinoma of the Abdomen in a Young Man, by Dr. Roby; Cyclic Vomiting, by Dr. Talbot; The Serum Treatment of Type I Pneumococcus Pneumonia, by Dr. Lord; Asthma, by Dr. Rackeman; Preparalytic or Early Poliomyelitis, by Dr. Levine; Obstetric Paralysis, by Miss Trainor and Dr. Crothers; Myasthenia Gravis, by Dr. Mella; Osteomalacia, by Dr. Locke; Physiotherapy, by Dr. Granger; Bacteriophagy, by Dr. King; School Medical Work, by Dr. Rowell. A. A. E.

THE INFANT AND YOUNG CHILD. Its Care and Feeding from Birth until School Age. A Manual for Mothers. By John Lovett Morse, M.D.; Edwin T. Wyman, M.D., and Lewis Webb Hill, M.D. W. B. Saunders Company, Publishers, Philadelphia and London, 1923.

This is a first edition and the name of Dr. Morse is sufficient guarantee. It is simple, sensible, authoritative, and comprehensive. It never usurps the place of the physician. It could not inspire the mother with an undue sense of self-sufficiency. Advice as to the general care of the babe and older child is particularly sound.

Bath, clothing, nursing, wet nurses, weaning, feeding at progressive ages, the signs of normal growth and of malnutrition, sleep, exercise, air, training, education, bad habits, avoidance of disease, care during disease, and emergencies, are the principal headings and are very satisfactorily handled.

Advice as to the diet of the lactating mother is excellent, and wisely explodes many firmly established but fallacious traditions which have often been harmful to both mother and child.

It seems to the reviewer, however, that the mother's diet during pregnancy should be touched upon and the great importance of the diet of both mother and child in the development of the child's teeth, and the high percentage of school children that have defective teeth should be pointed out, and prophylaxis stressed.

Vitamines might well be more fully explained in order that the mother may know what they are and that they come from dairyman, grocer, and butcher, and *not* from the druggist or nostrum vender.

The chapter on wet nurses is most commendable.

That we suggest some improvements for the second edition in no way detracts from our high commendation of this work, which is deserving of great popularity.

In considering artificial feeding the word "tubercular" is used where "tuberculous" is intended.

Under diphtheria, the advisability of immunizing all children between the ages of 6 months and 6 or 8 years without the loss of time and the annoyance of "Schicking" should have been urged.

The susceptibility of infants and young children to tuberculosis might well be stressed.

(Continued on page xiv.)

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ORIGINAL ARTICLES

THE ROLE OF ULTRAVIOLET RAYS IN RICKETS*†

ALFRED F. HESS, M.D.
NEW YORK, N. Y.

A steadily increasing interest in rickets has been very evident during the past few years. Until recently medical men paid little heed to what seemed a very common, mild and not very important malady. Such was my attitude, and, I believe, that of many others. But recently this point of view has been changed completely, due mainly to our general interest in vitamins. In the first place, study was focused on scurvy, a typical disorder following a lack of vitamins, and then, naturally, shifted to rickets, always considered an allied and closely related disorder. Furthermore, as has happened so often in medicine, a great impetus was given to these investigations when we learned how to produce the disease experimentally. Mellanby deserves the greatest credit for this discovery, although his results were not absolutely uniform. In other words, he was not able to produce the disorder regularly and constantly. He was able, however, for the first time, to put animals (puppies) on a definite diet and bring about changes which histologically were the same as those in rachitic infants. From this time the way was clear. Investigation was further facilitated by the use of the rat as an experimental medium, because this is an animal which grows much more quickly, and can be provided in large numbers, so that dozens of experiments can be performed for one which could be undertaken where puppies were used.

As long as the discussion of rickets has existed, ever since the time of Glisson in the seventeenth century, there have been two camps in regard to its etiology. One has maintained that it is dietetic in nature, and the other that it is hygienic. Among those who believed it due to faulty hygiene, some thought it the result of lack of sunlight, some of the lack of fresh air, some of unhygienic, unclean surroundings, some to undefined toxins in the air, to polluted atmosphere. On the other hand, there were those who, as stated, did not believe that hygiene played a part or an important part, but that like scurvy, it was purely a dietetic disorder. We now know that both camps were right—that there is an important hygienic and an important dietetic factor.

In animals, especially in rats, one can produce rickets at will. Feed the white rat a rickets-producing diet, and rickets results in 100 per cent of the animals. Add certain things to this dietary and no rickets develops. The peculiar seasonal incidence of rickets has been known for years. There are other diseases which are seasonal, for instance, pellagra, which occurs about in May and disappears in the summer. There are pneumonia and other respiratory diseases which reach their peak in the winter. Rickets is remarkably seasonal, a fact which was recognized by clinicians and by pathologists as well. It has its great incidence in the winter, increasing in the spring, and disappearing in the summer. This condition could be attributed either to change in the dietary, or to variation in the season; so it is clear that the mere fact that there is this marked seasonal variation does not throw much light on the etiology. I tried to eliminate the dietary factor by using "summer milk" during the winter time—in other words, using dried milk which had been produced by cows fed on pasture, and feeding it in the winter. This investigation came out negatively. Just as many infants developed rickets during the winter on the "summer or pasture milk" as on the ordinary milk.

It has been shown that ultraviolet light is an absolute cure and preventive for rickets, whether we use the ultraviolet light from the sun or from an artificial source. If you expose animals or infants to sunlight, they will be protected against rickets. Instead of using the sunlight, if you employ an artificial source of light, such as the mercury vapor lamp or the carbon arc lamp, their radiations will protect the infants from, or cure them of rickets. This is definite proof that light is an important etiologic factor.

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†Lantern demonstration.

As to the question whether diet or light is dominant, the answer is very difficult. It is possible that in a place like Pittsburgh one factor may be the more important, whereas in New York or London, or Paris, or Berlin, it may be subordinate to some other cause. It depends on the amount and quality of the light. It is not light as we usually think of light that is the active factor; it is the ultraviolet or short rays, the rays shorter than 400 millimicrons. The long rays are of little value. For instance, if you had a child in a room with the window open and the sunlight falling on its body for about half an hour a day, that child would be cured of rickets, as demonstrated clinically by means of x-ray examination of the epiphyses, and by chemical examination of the blood. However, if you have the window pane intervene, and have the sunlight traverse this glass, then all of the effective rays are filtered out. The room is just as light, but all the short ultraviolet rays, those below about 334 millimicrons, are filtered out and the infant will develop rickets. From the standpoint of rickets, the sun has just as little value after it has been filtered through a window as if it did not shine at all. That is a very important consideration from the standpoint of therapy.

It is quite understandable that light should be essential for man. I have always felt that the Egyptians in worshipping the sun god were very wise people. It is strange that physiologists realized the importance and necessity of light for plant life, but that they did not apply this principle to animal life. The physician also knew that if you grow a plant in the dark it loses its color, its chlorophyl, but did not reflect that the same rule might apply to animals.

DISCUSSION

Dr. Henry T. Price (Pittsburgh, Pa.): We are extremely fortunate in having Dr. Hess with us to-day, for it is of great importance to have a man who has carried out these experiments present them to us in such a simple manner that the man least educated in laboratory methods can understand them. A lot of experimental work is of little value because it is not practical, but one of Dr. Hess' charts has shown that about 97 per cent of children have some form of rickets. The value of diagnosis of rickets depends a good deal upon the person who makes the diagnosis. Naturally, some men feel that the cases they are treating have no rickets whatever, while we find another man will have thought of rickets; but an unbiased opinion will show that rickets is far more prevalent than is generally believed.

Dr. Hess has taken points that anybody could have picked up, as "he who runs may read," but he takes these points and puts them to practical tests. Fortunately, he has had material at hand to carry them out and get definite results.

We have known for quite a while the effect of light on plants, and these experiments were carried out a little bit more carefully on plants than on animals before Dr. Hess took it up. We all know that the government will spend thousands of dollars on protecting plants and developing plants, and protecting animals and developing animals, while it spends very little on the human being, and it takes private funds to apply this important work to the human being.

It was the latest work of Dr. Rotch that brought to mind the value of the x-ray in studying the development of the infant, and his work has popularized its use for this purpose. Here we have the x-ray used in giving very definite facts regarding rickets which may or may not have been determined clinically.

The Doctor has mentioned that both the dietetic and hygienic factors are responsible for rickets. I think if he would tell us whether he has been able to produce rickets by diet when the subject is exposed to the rays, it would help us considerably. All told, the importance of this subject should be broadcasted throughout the country, for you know how long it takes new points to spread. It may take quite a while before all the doctors will see the importance of sunlight (see the light, rather!) in treating these cases of rickets; but it is up to us to carry out this propaganda and have the proper treatment for our children popularized.

Dr. William N. Bradley (Philadelphia, Pa.): I should like to ask Dr. Hess if he can give us any information regarding the occurrence of rickets in colored children of our own southern states or other countries which are inhabited by the colored race?

Dr. Howard C. Carpenter (Philadelphia, Pa.): Will Dr. Hess give us some practical advice as to the dosage of sunlight he would recommend be given to normal infants daily during the winter months in Pennsylvania for the prevention of rickets? I should also like to ask if there is any material which could be used in place of glass in the windows of a baby's nursery which would not filter out the ultraviolet rays?

Dr. Robert K. Rewalt (Williamsport, Pa.): I should like to ask Dr. Hess whether or not in his opinion, if the normal child is subjected to the rays of sunlight during the period we will say from April 15th to the 15th of October, that would be sufficient to prevent it from developing rickets over the winter months?

Dr. Zaccheus R. Scott (Pittsburgh, Pa.): I should like to ask Dr. Hess what is the mechanism of the phosphorus increase as a result of the violet ray treatment?

Dr. Joseph B. Feeley (McKeesport, Pa.): I should like to ask Dr. Hess about the calcium retention.

Dr. Eleanor C. Jones (Philadelphia, Pa.): I wish to report the successful use of the carbon arc lamp in a very bad case of rickets in a white baby of fifteen months of age. This child was unable to walk alone. We used the lamp according to Dr. Hess' method. The child was exposed daily for one-half hour, at a distance of three feet from the lamp, during a period of two months. The increased deposit of calcium at the epiphyses (knees) was shown by roentgen rays examination. The child at the end of two months' treatment was able to walk alone.

It should be remembered that the ordinary electric light wire is not able to carry the high voltage required by this lamp, so that it is necessary to attach the lamp to a heavier cable.

Dr. Hess (in closing): Before attempting to answer questions I want to emphasize that ultraviolet light is not the only curative or prophylactic agent in rickets, and that cod liver oil is a specific. While it does not cure absolutely in every case, cod liver oil is to be ranked with quinine in malaria, certainly with mercury and salvarsan in syphilis. It is one of our few specifics, so that we are placed in the position of having two specifics—the only instance I know of where we have two specifics for one disorder. In view of this fact it hardly seems possible that rickets will persist, because where one of these remedies cannot be administered the other may be. Recently I have found that egg yolk is effective in preventing and curing rickets. This has the great advantage of being more readily taken by infants. It can be begun at about the sixth week of life, incorporating one-half of an egg yolk in the 24-hour formula. An entire yolk can be given somewhat later. Infants tolerate this well. It has the additional advantage of supplying a large amount of fat-soluble vitamin and of iron. Hard boiled egg seems to have lost none of its potency in this respect.

Dr. Price has asked whether, if you continue the faulty diet, the light is able to effect a cure. We do not know what a faulty diet is. I think if you were to ask half a dozen child specialists what they considered a faulty diet in regard to rickets they would name a great variety of diets. It is needless to enumerate some that have been mentioned, such as some proprietary foods, but they do not invariably cause rickets. I hardly know what a faulty "rickets-producing" dietary is. As I showed you, one-third to one-half of the breast-fed infants have rickets, if you judge by careful criteria. Therefore, if we continue the diet on which the child developed rickets we can cure it by means of ultraviolet irradiations quite as well, as far as I can judge, as if we changed the diet, for we really do not know what to change it to. The only effective change I know of is the addition of cod liver oil.

Regarding the amount of rickets in the southern states, it is very difficult to get statistics or even a definite opinion. Some years ago I looked through the southern medical journals in order to get this information, but without avail. I think, however, that we must draw a distinction in regard to rickets between negroes of the southern states of African origin, and those of other origin. One can readily see that they are quite a different race; it seems to me that rickets is more marked among the African negroes than those which come from the West Indies. In New York, in a small negro district, I found about the same percentage as Schmorl found in his pathologic examinations—that is, fully 90 per cent of the children had rickets. But it depends upon what season of the year you conduct the examinations. When you refer to the incidence of rickets you must not only state the "season" but the "month." If you wish to ascertain the incidence of rickets and to note the peak, you have to make examination in March. If you do you will find the incidence very high.

It would be a great mistake and very harmful in regard to the eradication of rickets if the general opinion obtained that one has to use laboratory methods for the diagnosis of rickets—the x-ray or chemical examination of the blood. The very best single sign is the beading of the ribs or rosary. There is a slight rosary normally, but if the sign is well studied, and the beading is compared with radiographs of the wrists, one will learn to diagnose rickets solely by means of the beading and I think find it a most reliable sign. It will rarely be necessary to use the x-ray.

Regarding the dosage of sunlight, it is generally understood that it should be given in increasing doses; this is true likewise of the artificial rays. For instance, you begin with about five minutes, exposing the infants in the morning at about nine or ten o'clock. Always have the head covered, for infants do not do well if their heads are exposed. The cap does not have to be thick, but the strong rays must not impinge directly on the head. The first day I expose the legs, the next day the arms, increasing until the exposures have reached about half an hour, depending upon the heat of the sun. This can be done also in cold weather, January or February. In that case you must see to it that the baby is warm; the trunk must be well protected.

I generally have a woolen garment that is tight around the arms and legs, and heavy sweaters to keep the body warm. If the infant is protected from the wind, it may be exposed for increasing periods. The extremities must not become chilled. "Feel the toes" and if they are warm the baby will be warm. After exposure it may be advisable to take the temperature to ascertain whether it is subnormal. Wind is a greater contraindication to heliotherapy than cold.

Dr. Rewalt asked if giving the sunlight in the summer time will protect the baby in the winter time; in other words, whether it has a prophylactic effect. Neither sunlight nor cod liver oil is potent in this regard. I have seen infants that had sunlight treatment throughout the summer develop rickets the following spring. Probably cod liver oil is somewhat more effective than sunlight. It may be stored, whereas the effect of the rays cannot be stored.

The mechanism of the increase in phosphorus I do not know. The entire mechanism of heliotherapy, how it acts, whether directly on the skin, on the blood, through the nervous system, whether the endocrine glands play a part, is absolutely unknown. There is no question that there is deficient retention of phosphorus and of calcium. In tetany where the calcium is low it is brought up to the normal level. In rickets where the phosphorus is low it is raised to the normal level. The radiations seem to be a stabilizer, so that whatever is low, especially calcium or phosphorus, is brought to the normal level; but how this is accomplished, through what mechanism, is as yet a mystery.

HIGH VOLTAGE X-RAYS IN CANCER*

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Within the last three or four years a great deal of interest has been aroused in the use of x-rays for the treatment of cancer. Quite a number of American physicians have been forcibly struck by the claims advanced by various European workers, notably the Germans, for the value of the new deep roentgen therapy. Some of our number have journeyed across the sea and have returned in a high state of enthusiasm because of their observations of results obtained from x-ray therapy in the various European clinics. Especially striking was the enthusiasm of many whose specialty or line of medical work prevented them from having intimate knowledge of the application of x-rays, as used in x-ray therapy. Some experienced in roentgen therapy have visited various German clinics and have reported the claims of the workers as highly tinged with over-enthusiasm, but noted that there was apparent sufficient evidence in the form of tangible results to shake the reserve of the most skeptical.

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Within the last year on several occasions the press has brought before the public in spectacular headlines, news of the new 200,000 and 300,000 volt x-ray machines. The Sunday Press Pictorial has presented pictures of this new apparatus and various periodicals have seen fit to devote space to information on the same. Many medical journals are found to have articles on results obtained from the use of the new high voltage x-rays.

With the public interest being aroused and improved results being reported, it is important that the general practitioners and others in the medical profession not directly engaged in this work become acquainted with some of the principles and facts underlying high voltage roentgen therapy, so that they may be able to advise for or against the use of this improvement in x-ray therapy.

With the amount of effort that is being directed towards the study and control of cancer it is altogether fitting that the medical profession in general become acquainted with recent advances in the treatment of cancer.

It is incumbent upon the surgeon, especially, to familiarize himself with the essential facts relating to the results to be obtained by high voltage therapy in order to know whether or not his patients should be referred for deep roentgen ray therapy; also, if referring his case, that he may be able to give the radiotherapeutist the necessary valuable data required for proper administration of the x-ray treatment.

With the above in mind the writer hopes to present some of the essential points in deep roentgen therapy, together with some observations obtained from personal experience in the application of high voltage x-ray in the treatment of neoplastic conditions during the last twelve months.

In this discussion of high voltage x-rays in the treatment of cancer I hope I will not be understood as recommending it as a panacea in all cancer. Insulin administered to all diabetics would, it is known, be a waste of a valuable agent in many cases. So also salvarsan, at first by many hailed as a cure-all for syphilis, has been found to have its limits. The new improved high voltage x-rays can only be considered as one of the agents to be used in the treatment of cancers, and not recommended as a single treatment for all cancer.

Surgery has done much and still holds a leading place in the treatment of cancerous conditions. Radium still retains its prominent position in the treatment of malignancy, and we have as a valuable aid to the above agents the use of electricity in the form of electrocoagulation or as electrocautery. A judicious combination of surgery, x-rays, radium and electric destruction is productive of the best results in the treatment of cancer to-day.

Some ten years ago when I took up x-ray work the Coolidge tube was just being brought into general use for radiography and therapy. With the advent of this tube there was really born a new era in roentgen therapy. Previous to that time there had been a great deal of variation in the therapeutic application of x-rays because of the lack of stability in the tubes used and because of the imperfection of the apparatus used to energize the tubes.

Dessauer, who had been working some six or eight years previous to the introduction of the Coolidge tube, had proved that homogeneous radiation was necessary for best results in subcutaneous or deeper therapy, and that such radiation could only be produced when short wave lengths were used. The production of short wave lengths required high voltage, and to produce high voltage required improvement in apparatus.

Refinements have been reached in the manufacture of x-ray apparatus making possible the maintenance of constant very high voltages (200,000 to 300,000 volts). The introduction of the Coolidge tube, which permitted a big step forward towards the realization of the present day deep roentgen therapy, has been further improved to a point where it will withstand the above voltages. With this new equipment we can produce in deep structures radiation of such homogeneity that deep-seated masses can be literally bathed with rays of similar biological and physiological values, in qualities nearly if not quite equal, for each cubic centimeter of tissue being treated. To do this without damage to surrounding healthy tissue requires proper filtration; that the rays be properly directed, that a dosage estimate be made and that careful measurement of the radiation be obtained.

While recent improvements in apparatus have made possible the production of radiation of short wave length, something necessary for deep roentgen therapy, it has in addition brought about a wave of biological research in which there is an endeavor being made to throw some light not only upon the best method of producing beneficial results, but also upon the unpleasant results, and to find some way of avoiding them.

In the practical application of x-rays in the treatment of deep seated malignancy in the past, certain factors had to be heeded to avoid disappointment and disaster. The success attained preceding the new high voltage therapy depended largely upon: 1, the quality of x-rays emitted; 2, the quantity of x-rays emitted; 3, the time of exposure to the rays; 4, the distance of the tube from the part; 5, the amount of filtration; 6, the size and number of the ports of entry.

These are still cardinal points and command closer attention on the part of the radiotherapeutist when using the new high voltage apparatus than formerly.

While the above factors form a basis for the estimation of dosage, it has been found that a more accurate determination of the quality and quantity of x-rays is necessary. To this end investigation on the part of physicists has resulted in the introduction of instruments for the purpose of more accurately measuring the output from the x-ray tube. Efforts have also been made to estimate accurately the quality and quantity of radiation at various depths in tissue by making tests in a phantom. As an aid in calculations of dosage several workers have plotted charts showing the amount of x-rays at certain depths beneath the surface. These charts were produced after careful tests, using the various practical factors applied in high voltage x-ray therapy, and are considered of valuable assistance in forming a plan for treatment of deep-seated masses. These efforts of measurement, both indirect and direct, have been made with the hope of making more accurate the estimation of dosage. In Europe there has been formulated a plan of dosage estimation based upon the skin reaction induced by high voltage radiation, and certain percentages of this skin dosage have been estimated as being necessary for a lethal effect on certain neoplastic growths. While the estimation of the dosage in percentage of skin units forms a working basis, we must not be lead to believe that it established a definite dosage of radiation which will be lethal for all types of malignant diseases.

The question of dosage unfortunately is still in the process of development for practical use. Attempts at measurements of radiation are being made from the physical standpoint by the employment of delicate instruments such as iontoquantimeters, intensimeters, etc., but these by virtue of their delicate mechanism are not practical in the hands of the average doctor. They are easily deranged and thus prone to lead to error, which might be disastrous.

In addition to the unsettled dosage question from the physical side there is still a problem embracing biological, anatomical, physiological considerations, which play an important part in the determination of the correct dosage.

The different tissues of the body respond in varying fashion to intensive irradiation. The question of dosage is apt to remain for some time an individual consideration, in reference to the local lesion as well as to the individual patient, and unless radiation treatment is undertaken with due consideration as to its applicability in the individual cases, keeping in mind the fact that one must do as little harm as possible to the healthy tissues and yet have sufficiently destructive effect upon the disease, the progress which has been made may be greatly retarded. Fear has been expressed by our leading radiotherapeutists of the outcome of the use of these powerful high voltage machines when placed in the hands of untrained and inexperienced men. There has not yet been worked out a technic in this line of work which can be transmitted from one to another. No doubt in years to come it will be put down in black and white, so that for the present much will depend upon experience and judgment of the radiotherapeutist. As there is in surgery a fine sense of surgical touch and a fine sense of surgical judgment, so there is an indescribable quality of x-ray judgment which must be utilized in this important work.

In surgery the main question is often how extensive is the malignancy or can it all be extirpated and the patient live? To the radiotherapeutist the questions are: How sensitive may it be to radiation? How extensive the involvement? Can it be radiated without impairment of the resistance of the surrounding tissues? Will the neighboring organs be affected so as to impair their normal function? Is the amount of radiation necessary going to disturb the endocrine system? And a host of other questions, all of which require of the roentgenologist, as in the case of the surgeon, that he be first of all a clinician, realizing that he has under treatment a patient afflicted with a cancer.

Previous to the advent of the recent high voltage x-ray therapy, attention was largely centered upon the fact that atypical neoplastic cells are more vulnerable to the action of x-rays than are normal cells, little attention having been paid to normal tissue changes resulting from x-ray exposure, serious skin reactions being the source of greatest anxiety.

To-day with high voltage x-ray therapy the effects upon structures surrounding the neoplasm and the effects upon the general nutrition and the resistance of the patient are sources of anxiety. We have effects which occur shortly after the application of the x-rays, while on the other hand we have effects which are quite late in their occurrence. In the latter case it will require years before a full realization of the after results can be tabulated.

Never before in x-ray therapy has it been so important that it be realized that we are treating a patient sick with cancer, and while we know that cancer cells are susceptible to x-ray radiation, we must also remember that the x-rays have an effect upon normal cells, and that some of these normal cells are more seriously affected than are others. We know that highly specialized cells are more susceptible than others less highly specialized.

We have, in the treatment of deep cancers, areas under radiation which include organs and tissues of the endocrine system and of the digestive system and other systems containing highly specialized cells, and must keep in mind that impairment of portions of these systems may seriously interfere with a whole group of organs.

In the use of the new high voltage x-rays these susceptible organs and tissues must be avoided as far as possible. To do this requires that carefully calculated estimates of radiation must be so directed that the maximum radiation in the body will not be spent upon innocent susceptible tissues, and yet sufficient radiation be delivered to be lethal for the offending or neoplastic tissue. Over-radiation of local tissues surrounding the diseased area is dangerous because it lowers the resistance of local cells, thus weakening the local defensive forces of the body, while radiation which weakens the endocrine or digestive systems lowers the general bodily defenses and adds troublesome general disturbances.

From a review of the high voltage x-ray situation as at present applied in cancer it seems as though the clinical aspect is alive with possibilities for good and also for bad. There has been some rather wild enthusiasm manifested by some, but mostly from those not experienced in x-ray therapy, the conservative radiologist being careful to plod along with painstaking care in an effort to get the best possible good and avoid bringing discredit upon a valuable advance in the science of radiology.

The writer, as a successor to the late Dr. Russell H. Boggs, was called upon to continue treatment instituted in a large number of cases by our former methods. After the installation of the high voltage machine a number of cases were treated which were inoperable and had had no previous x-ray or radium treatment.

It soon became apparent that the high voltage was productive of more prompt improvement than with the former method, so that after a few months many of the cases which showed slow or but slight response to the old method of treatment were subjected to high voltage and with gratifying results.

In a number of breast carcinomas, in which operation was out of the question, quick response was obtained and sufficiently spectacular to impress one with the effectiveness of the new method. In a number of uterine carcinomas large masses were made to melt and in a way not hitherto observed. In bladder carcinomas most gratifying improvements were obtained. In a case of sarcoma, filling the pelvic cavity and presenting a palpable mass above the pubic bone, high voltage x-rays caused almost total disappearance of the mass in two weeks. In rectal carcinoma there was marked benefit, although in these, as in uterine cases, radium reinforced with x-ray was the method employed.

A case of carcinoma of the antrum, resisting radium and former x-ray treatment, responded quickly to high voltage and is now in excellent condition months after treatment. Several patients with lymphosarcomas, suffering great pain, have been promptly relieved of the pain following the application of high voltage x-ray. One case having convulsions from apparent brain metastasis had his convulsions stop by high voltage application to the head.

A large mediastinal tumor was caused to disappear in two months. A number of mouth cancers treated were favorably retarded. One, a large mass in the mouth, arising from the tongue, almost entirely disappeared in two weeks. Others showed subsidence of the offensive discharge and relief from pain. One brain tumor, diagnosed sarcoma at operation, showed marked improvement for several months.

While there has since the installation of our high voltage machine been gratifying improvement and unquestionable diminution of neoplastic involvement, affording a more hopeful outlook than at any previous period, time for making claims is far too short to be conclusive. Before broadcasting high voltage radiation it will be necessary to become better acquainted with late local effects besides the effects upon remote structures and the body in general.

This requires time and extensive biological research. For the present a conservative coöperation between the surgeon, family physician and the roentgenologist is the position which is to be recommended until biological research has established more firmly the therapeutic possibilities of high voltage radiation.

DISCUSSION

Dr. G. W. Grier (Pittsburgh, Pa.): Unfortunately, from a scientific standpoint, high voltage treatment and the so-called one-dose method of treatment came into usage about the same time. These are entirely different principles, but they have been used together and a great deal of confusion has arisen from this fact. High voltage currents produce rays of a great penetration and the only way these differ from other x-rays is that they go deeper into the tissues, but after they reach the deep tissues they act like other x-rays. They have no different action; they are simply x-rays.

A case of cancer which is incurable by x-ray treatment may be so for a number of reasons. There may be metastasis to vital organs, or to unknown places, so that we do not know where to treat; or, it may be that the original lesion is in some vital organ like the stomach, bladder or pancreas, so that the destruction of the cancer would necessarily destroy the vital organ. Or, the patient may be so toxic already that he would die of toxemia even if the cancer were cured, or perhaps the cancer is located so deep that you cannot get enough x-rays to it to affect it.

The last one of these reasons is the only one that is affected by high voltage treatment. This treatment makes otherwise inaccessible lesions accessible to x-ray treatment. If inaccessibility is the only reason why a case is incurable, then high voltage treatment is a great advance over the older methods of treatment, but if incurable from any other reason, then the final result will be the same.

Now as regards the *one-dose* method of treatment: Wintz conceived the idea that if you delivered enough x-ray to the cancer at one time to destroy the cancer you would cure the patient. This may be true, but the question is, how much x-ray does it take to do that? Wintz thought if you delivered 120% of a skin erythema dose to all parts of the cancer you would entirely destroy the cancer. Now, I do not believe that and for very good reasons.

Frances Carter Wood of New York has demonstrated that certain types of cancer require from 500 to 700% of a skin erythema dose for their destruction. It is possible to deliver 500 to 700% of a skin erythema dose to a small epithelioma on the face and the only result will be a small local area of destruction. This destruction, of course, will involve some normal tissues, but as the lesion is small and on the outside, the amount of normal tissue destroyed does not amount to anything. To attempt to deliver such a dose to cancer of the uterus, for instance, would mean the destruction of a large amount of normal tissue surrounding the lesion and this destruction would probably be so great that it would kill the patient. For that reason, I believe the number of cases of deep-seated cancer which can be destroyed at one dose is quite limited.

What I believe is, that by the high voltage method with repeated doses, as much as the normal tissue will stand, you may be able to produce retrogressive changes in the cancer and increase the resistance of the surrounding normal tissue so that the cancer will ultimately become surrounded by a barrier of fibrous tissue and the patient be cured.

Dr. Forest L. Schumacher (Pittsburgh, Pa.): We have apparently reached the transitional stage in our therapy following the use of this new agent that has been put into our hands. Since the American roentgenologists have worked out the dosage the pendulum is gradually swinging back, and now the x-ray dose is being so stabilized that we begin to see results. The early writers on deep ray therapy formulated four cardinal principles: First, to prevent dissemination; second, to destroy growth at one sitting; third, to render inoperable cases operable; fourth, to relieve pain. There is considerable question now as to whether we shall accept the one-dose method or go back to the fractional dose method. Americans apparently are going back to the fractional dose. The Germans first gave a single dose which they called a lethal dose. In many cases the damage to normal tissue was so great that it could not be repaired.

In the short wave therapy there are distinct advantages over the old method of nine-inch therapy. One is that we produce roentgen radiation of much higher penetrating power. We use now 200,000 to 300,000 volts instead of 90,000 to 100,000. These rays simulate the gamma rays.

Then we use a greater target distance. That is a distinct advantage, in that the greater the distance from the tube the more homogenous rays reach the part and the greater the penetration. The effect varies inversely to the square of the distance, but the greater percentage of rays reach the part at which we are aiming.

The third advantage is the utilization of larger areas for each field of radiation. This differs from our previous conception when we thought we had to use a smaller area for radiation. Consequently it reduces the number of treatments.

The fourth factor is that for filtration we now use copper, glass and alumnium, and filter out the soft rays. Of the three classes of rays—penetrating, secondary and scattered—it has been proved that filtration with the scattered rays is practically analogous to the secondary ray with the old method and has as good effect.

There are certain features that are a trifle hard to overcome, especially from the technical side. We have a multiplicity of machines, etc., but the apparatus is being standardized and now that we have the new Coolidge tube on the market we expect to have even a more satisfactory tube than is in use at present.

Dr. Richard E. Brenneman (Pittsburgh, Pa.): Dr. McCullough has performed a distinct service in bringing this subject before us this afternoon. Dr. John G. Clark said yesterday that we had discovered no specific for cancer, in which statement I agree. Dr. W. J. Mayo has said that 71 per cent of cases of cancer could be cured by surgery. That is true, if the cases are seen in time. I simply wish to mention at this time the applicability of the deep x-rays to the 29 per cent that cannot be cured by surgery and to all inoperable cases, leaving to your own judgment the relative value of radium and deep x-ray in operable or borderline cases. Dr. Clark relies more upon irradiation than surgery in treatment of cancer of the uterine cervix.

In visiting various clinics recently, particularly that of Crile, I was impressed with the progress that irradiation has made during the past year. Crile's investigations show that certain organs have different electroconductivity, possibly suggesting one reason why we get good results in some cases and not in others.

During the past year I have found that my results in deep-seated cancer have been improved by the use of the deep x-ray therapy about 15 per cent over the use of radium alone. I submit to you that any means of increasing the percentage of cures 15 per cent is worthy of serious consideration.

During the last nine or ten months I have treated five cases of carcinoma of the stomach with the deep x-ray alone. Four were hopeless, and these cases have all been benefited, probably not cured, but they have been given relief and many added months of life. Again referring to Dr. Clark, who said yesterday, in regard to irradiation in inoperable cases of uterine cancer, if we can in the treatment of any deep cancer ameliorate the symptoms by stopping hemorrhages, doing away with offensive odors and relieving pain, we are justified in using the well recognized forms of irradiation in the treatment of deep-seated malignancies.

ESSENTIALS OF NEUROLOGICAL EXAMINATION IN CHILDREN*

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Neurological investigation of adults as well as children is a matter of painstaking care and thoroughness. The ultimate correctness of the diagnosis depends upon the judgment of the physician in separating the wheat from the chaff and in unearthing with painstaking care all the factors that may have any bearing upon the case in hand. The chief beauty in the examination of the little patient himself lies in the fact that he is generally a truthful patient, a statement which cannot always be applied to the neuropathic adult. On the other hand much information concerning the patient that is given by anxious parents must be discounted, or in many instances, entirely disregarded. Family histories concerning the prevalence of mental or nervous afflictions are notoriously faulty. Unfortunately, in many instances, one must of necessity depend upon information which is at best quite inaccurate. This is particularly true in the so-called functional nervous diseases, where symptoms are vague and cloaked in apparent mystery. In cases of this type, trustworthy data can be obtained only by systematic, prolonged, and frequently repeated examinations. On the other hand numerous nervous conditions may be accurately diagnosed and the lesion more definitely located than is possible in any other field of medicine. For example, brain and cord lesion localization can be made exact to a degree by the use of certain instruments of precision.

Neurological conditions in children are essentially of two kinds, the congenital and the acquired, the prognosis of the former being much less happy than of the latter.

Before one can endeavor to look for pathological symptoms in infants and children, one must know their normal physiological reactions, especially those variations occurring as a result of growth. The age of the patient is of great importance because of the incidence of various diseases at various ages and the difference in the reaction of the child to pathological conditions at different periods of life, exemplified by the variation of the tendon and cutaneous reflexes in the very young infant as contrasted with their definite character in the older child.

At term the brain is very large in comparison with the rest of the body and it is very imperfectly developed and much more sensitive to irritation than later in life. The ratio of the weight of the brain to that of the body is, at birth, one to eight; at the twelfth month, one to six; at the second year, one to fourteen; and in adults, one to forty-three. Because of the relatively large size and rapid growth of the brain at birth, causes which would ordinarily be trivial are enough to produce profound nervous reactions, as exemplified by the frequency of convulsions in the course of digestive disorders. According to Holt,[1] this liability to convulsions depends not only upon the greater instability and irritability of the nervous centers, but also upon the lack of inhibitory impulses to the motor cells of the spinal cord plus the extreme sensitiveness of the peripheral nerves. By this same token, exhaustion of the nervous centers also occurs much more frequently in the infant than in the older child. In the matter of reflex irritation, the younger the child, the more pronounced is the reaction, as is noted in the residual hemiplegias which occasionally occur in young infants as a result of vascular brain lesions occurring in the course of digestive disturbances and some of the minor infections. Eye strain, dental caries, focal infection and dietetic errors make a profound reflex impression upon the central nervous system of the infant and young child. It is because of the rapid growth of the brain in the first year of life that small traumata frequently act as the foci of extensive and ultimately permanent injury by preventing the normal growth of contiguous parts. This is quite well illustrated by the far-reaching and devastating results of small birth hemorrhages in causing eventual paralysis and imbecility.

At birth, all acts are purely automatic or reflex. The flexor muscles are stronger than their antagonists and the head is not held upright until the third or fourth month. Sight is limited to light perception for the first few weeks after birth and extra-ocular coördination does not appear until the age of three months. The winking reflex on the approach of an object toward the eye does not appear until the seventh week. Hearing, and the sense of smell and taste, and tactile and pain sensibility are extraordinarily acute at birth, due to the great irritability of the peripheral nerves. For example, if one gently strokes the sole of an infant's foot, there promptly ensues a very typical and complex movement of both legs, known as a defense reaction. The ability to perceive variations of heat and cold is apparently well developed at birth, as exemplified by the audible displeasure of the infant at becoming cold and the oposite reaction of the infant to a warm bath; but these apparent mental qualities are merely reflex vegetative reactions to stimuli, as are the reactions to hunger, pain and sleep. Memory—the first real indication of awakening mental activity—is first noticed about the third month. Hence the impossibility of determining the mental caliber of a child prior to this age, a request which is frequently made of neuropsychiatrists by parents, and in many instances, by doctors. Speech is manifest between the eighteenth and the twenty-fourth months.

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Concerning the tendon and musculocutaneous reflexes in children there is much contradictory opinion. This is especially true in regard to the plantar reflex, the knee jerk and the occurrence of ankle-clonus. Concerning the latter, some authorities believe it to be practically nonexistent in children. De Angelis[2] of Naples has recently reported a series of observations made on eighty-eight newborn, healthy and physically sound infants less than two days old. He noted in a general way that an inverse relation exists between the tendon and cutaneous reflexes according to growth; namely, the greater the weight and development of the baby, the more vigorous the cutaneous reflexes and the weaker the tendon reflexes and vice versa. Concerning the plantar reflexes he found that approximately 57% gave a plantar flexion response and 43% gave dorsal extension. Babinski[3] first drew attention to the apparent frequency of dorsal extension of the great toe in infants and attributed the phenomenon to alterations in the pyramidal tracts, deducing that this should be a normal physiological reaction due to insufficient myelinization of that tract in early infancy. Engster[4] and Leri[5] found dorsal flexion to be almost a constant response during the first week of life, while Finizio[6] found flexion of the toes in 70% of his cases, dorsal extension in 15% and an undecided reaction in 15%. The preponderance of the dorsal extension over the plantar phenomenon continues, according to the investigations of Engster,[7] until the twelfth month, at which time the ascendancy of the plantar response begins, until at the third year of life he noticed 95% giving plantar flexion.

Dr. C. W. Burr,[8] in a series of 69 observations made at the Children's Hospital and the General Hospital in Philadelphia in 1921, reports: "The plantar jerk is very variable. It may be absent up to the third month or longer or there may be dorsal extension or plantar flexion of the toes, or at one time there may be one movement, at another time the other. More frequently there is extension."

Concerning other reflexes, Dr. Burr. reports: "The deep and superficial reflexes, knee, Achilles, chin and abdominal, may be present at birth but the absence of one or all does not indicate disease. The Achilles jerk is frequently absent at birth. Sometimes the abdominal reflex can be obtained only on stimulating the lower third of the muscle. The knee jerk was present in sixty-one of the sixty-seven infants examined, three of whom were less than one hour old."

Having considered some of the essentials of the physiological reactions in children, one is in a position to take up the matter of examination. Many hospitals make use of stereotyped and set forms for the recording of data concerning various types of nervous diseases such as epilepsy and chorea. These are to be condemned because of their inflexibility and non-adaptability to all types of cases, as cases are rarely absolutely similar. In no branch of medicine are conditions so prone to variation as in the realm of neurology. Some diseases, such as chorea and hemiplegia, are obvious at a glance; others, particularly the neuroses, are possible of diagnosis only after the most minute and careful history-taking and examination, frequently oft repeated. In some cases, removal of the little patient from the parental environment to that of a well regulated hospital is imperative, before the true character of the patient's ailment becomes manifest.

Before an exhaustive neurological examination is made, especially in hospital practice, it is essential that the child be given a warm bath, be reclothed, fed and placed in a warm bed and allowed to rest for an hour or so, in order to eliminate the effects of exhaustion and emotion as far as possible.

A correct and detailed family history is of greater importance in cases of mental and nervous disease than in any others. In its relation to the occurrence of mental and nervous disease it is notoriously unreliable, pride preventing the parent from disclosing "skeletons in the closet" to the other parent or to the doctor in charge. Much tact must be employed in dealing with this type of parent and this part of the examination should be in the hands of the doctor alone. Social service investigation by thoughtless workers has frequently caused marked recriminations against the doctor ordering the investigation. The frequency or infrequency of neuropathic conditions in the family is the important part of such an investigation. The various phobias, obsessions, alcoholic excesses, and various types of moral obliquity occurring frequently in the same family are of more significance than individual instances of mental deficiency or insanity. Criminalism, precocity, genius, neuroticism, insanity and mental inferiority are important causative factors of disease in the offspring. Some organic nervous diseases such as Friedreich's ataxia, Huntington's chorea, amaurotic idiocy and some of the muscular atrophies are distinctly familial. Consanguinity as a cause of mental and nervous degeneracy, has been stressed in the past to the point that numerous states and some religious sects have ruled that consanguineous marriages be unlawful. In families devoid of neuropathic taints such unions have proved healthily fruitful, as typified by the long and brilliant line of the ancient Egyptian Pharaohs who were consanguineous to an extreme. Consanguinity however, is likely to bring together the subjects of similar neurotic taints, which defects are thus reinforced in the offspring. Alcoholism or specific disease in either parent, especially at the time of conception, is inimical to the health of the child.

It has been glaringly obvious at my Clinic for Mental and Nervous Diseases at the Philadelphia Children's Hospital, that admixture of races is conducive to nervous degeneracy. This is particularly true in the addition of white and Indian blood to the African strain. Chorea is virtually nonexistent in the full-blooded negro, but it is extremely frequent in the mulatto. The more frequent the admixture of white and Indian with negro blood, the more frequent seems to be the occurrence of chorea, tics, epilepsy, somnambulism, eneuresis, night terrors and disorders of behavior. Mental deficiency and the so-called functional conditions of neurasthenia, psychasthenia and hysteria, especially in relation to speech defects, are the heritage of this blood admixture.

The history of the present illness should stress the age of onset, the initial symptom and in detail the progress of the disease to date. Where convulsions are a part of the picture, as definite a description of them should be obtained as possible, and when an observation of an attack can be made by the physician or by a qualified nurse, the information obtained becomes of great value.

The past illnesses of the patient are essential in proportion to the age of the child. The occurrence of previous illness or injury should be noted, especially encephalitis, diphtheria, rheumatism, meningitis, head trauma, septic infection and infantile "spasms." The life history of the patient from birth to the onset of the present illness frequently reveals details of importance. This is particularly true in regard to the character of the birth and the likelihood of injury to the brain or spinal cord having occurred at that time. The habits of the patient, his reaction to his environment, his manner of expression, his gestures, his posture, all reveal something to the keen observer. The matter of the diet, hygiene, home-training, or the lack of it, with the formation of normal or abnormal habits of thinking, frequently shed light on the beginnings of abnormal nervous reactions.

The essential factors in neurological examination of children are typically the same as in adults. Be not too prone to jump at a "snap diagnosis" because one symptom is extraordinarily pronounced. Weigh all details and eliminate the impossible, and in many cases diagnosis by exclusion will be the means of arriving at a correct solution of the problem. Do not look for the unusual and the rare disease, but look for the most likely condition that may have arisen in the child in the time, the environment, and at the age in which he is living. By holding to this rule, your diagnosis will be conservative and in most instances correct.

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ESSENTIALS OF NEUROPSYCHIATRIC EXAMINATION IN CHILDREN*

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INTRODUCTION

At first glance the problems of pediatrics and neuropsychiatry appear to be unrelated and as far apart as the poles. It seems almost revolting to think of the newborn babe in terms of a potential psychosis, mental deficiency, or epilepsy. During infancy the necessity of discovering a correct milk formula leaves no time for any consideration of the possibility of future nervous or mental upsets. During childhood such commonplace but serious diseases as measles, mumps, whooping cough and scarlet fever demand the full quota of the pediatrician's attention, and one can scarcely expect him to find and trace the vague and blurred outlines which may mark the beginning of insanity or a neurosis. Notwithstanding these facts it would be difficult to think of anything more important or more practical than the observation and study of the mind of the child. Annually in the United States at least 50,000 individuals become insane. Many of them succumb relatively early in life. It is popularly supposed that their minds disintegrate with an abruptness akin to the explosion of a bomb, but every intelligent physician knows that often the explosive elements were introduced during the developmental years of childhood and indeed that not infrequently they were present at birth. A few hours spent in a neuropsychiatric clinic for children should convince any reasonable person of at least two things: first, that a great number of both major and minor nervous and mental disorders are inaugurated and conditioned during the initial life decade; and second, that *never again* will there be a similar opportunity to control and eradicate them. It is the golden and in many instances, the *only* age of successful therapy. So there seems to be no escape for the already harassed and weary pediatrician. He must take upon his shoulders still another staggering burden. His is the chief responsibility for the mental soundness of the growing generation.

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POINTS OF CONTACT AND SIMILARITY OF PROBLEMS

On second thought there should be a common bond of understanding and sympathy between pediatrician and neuropsychiatrist. Many of their problems are strikingly similar. They both have to attempt to unravel curious and well-nigh inexplicable phenomena in their patients which may or may not represent the incubation of a grave illness. Fever, in an infant, may disappear after a dose of castor oil or it may be the precursor of a critical disease. Slight alteration of mood in an adult—a blue spell—may be corrected by judicious advice and a cathartic or it may be the signal flag of the approach of a long and stormy psychosis. As you well know there is much of pediatrics which is not printed in the textbooks. Neuropsychiatry, particularly in its application to children, is likewise wanting.

Again, neither pediatrician nor neuropsychiatrist can expect much voluntary help and coöperation from their patients. The sick baby cannot tell how and where it hurts, nor can the average individual who is mentally abnormal give a reliable account of the actual symptoms. In other words, we are both forced to take account of a considerable margin of error.

Finally, more than any other specialists, do we have to consider the tactful handling of relatives and friends. Babies and mental patients somehow always seem to have a host of relatives and their friends are legion. Experience in either of these branches of medicine should make one eligible for a honored position in the diplomatic corps. I do not know who furnishes the greater trial, the grandmother who scoffs at the "new-fangled" serum and wants to anoint the baby with goose fat, or the influential family friend who is urging the Abrams method of electrodiagnosis for the boy who has signs of incipient dementia præcox.

NEUROPSYCHIATRIC CONDITIONS IN CHILDREN WITHIN THE PROVINCE OF THE PEDIATRICIAN

I believe that pediatricians and a fair percentage of general practitioners have already accepted a portion of responsibility for the future mental welfare of the children whose physical health they supervise and guide. Less than five years ago, in my personal experience, one heard on every hand, in the public neuropsychiatric clinic or in private consultation, a constant repetition of the same plaint from the mothers of children who were psychotic, neurotic, epileptic, deficient or delinquent—"The doctor said not to worry; it would pass away" or "The doctor told me Johnny would outgrow it." In most instances the diagnostic and therapeutic resources of the day were summed up in these and similar expressions; unexplained convulsions, dullness in school, serious character defects such as seclusiveness, delinquent tendencies such as petty stealing and the like were largely ignored. Faith in the healing power of time was sublime and seemingly the addition of a few inches to the stature and a few pounds to the body weight was confidently expected to dispel the threatening clouds of a grave neurosis or even actual insanity.

To-day the situation is somewhat different. Parents bring children to clinics because they have been urged to do so by the family physician. Pediatricians are studying the technique and methods of neuropsychiatry and are applying the lessons learned in diagnosis and therapy to the children who come under their care. Off hand, I think of several examples which show this modern scientific trend. You have probably noted that pediatric societies are devoting a considerable portion of their programs and sometimes entire meetings to juvenile psychiatric problems. Organizations which were formerly interested only in the bodies of their charges are adding neuropsychiatrists to their staffs. Graduate courses in pediatrics are including the theory and practice of neuropsychiatry, particularly in its application to children, in their curricula. The Pediatric Section of the Graduate School of Medicine, University of Pennsylvania provides systematic instruction in the nervous and mental abnormalities of childhood.

There is one very practical reason why the diagnosis and treatment of these abnormalities are strictly within the province of the pediatrician. Neurologists and psychiatrists rarely see the patients when the disturbance is in its incipiency and when the prognosis is most favorable. On the other hand, specialists in your field of medicine often have the privilege of witnessing the very beginning of various nervous difficulties. A mother has a great deal of respect for and confidence in the physician who changed her baby from a puny weakling to a healthy and robust infant by the addition or subtraction of certain elements to or from the milk and who perhaps saved the life of her first-born by his prompt action in the presence of diphtheria. She is willing, nay anxious, to talk to such a doctor. She wants to confide her hopes and fears about her children and will be guided and advised. Here is your opportunity, an opportunity which does not often come to the psychiatrist. The information which comes to you casually, almost without asking, and is often denied to neurologists, contains the basis of the material from which you can get a true reproduction of the mental life of the boy or girl patient. You will be able to note redundancies in personality and direct their removal, defects in character and take steps to see that they are supplied. You will be able to retrace important steps and discover causes and if possible correct them. Of course, this implies an acquaintance with the essentials of examination and the necessary special knowledge which enables one to interpret findings correctly.

METHOD AND SCOPE OF A NEUROPSYCHIATRIC EXAMINATION

If it were good form both to capitalize and underscore, I would capitalize and underscore the word *thorough* as the chief requisite of a successful neuropsychiatric examination of a child. Accurate diagnosis depends chiefly on thorough and intensive examination. There is no place in medicine where "hunches," however brilliant they may be, are more misleading, out-of-place, and dangerous. You will probably acquire the needed information piece-meal and make the required examinations from time to time, but whether you follow this plan or devote yourself exclusively to the matter in several longer sessions, there must be no lack of completeness. A diagnosis should never be given until *all* the returns are in, and therapeutic conclusions should never be tried until *all* the etiological factors have been unearthed. For instance, in childhood delinquency the uncovering of a destructive environment does not eliminate a possible endocrine dyscrasia nor does the presence of infected tonsils rule out the pernicious influence of a degenerate companion.

CHIEF DIVISIONS OF THE EXAMINATION

History

It is scarcely necessary to emphasize the importance of an accurate history to a group of pediatricians. The surgeon or the laryngologist or the ophthalmologist may at times become impatient at long-drawn-out accounts because the physical signs are often obvious, they have instruments of precision, and the indicated course is clear. Rarely does the pediatrician or the neuropsychiatrist have this happy experience. Too often, the obscurity of the condition and the noncoöperation of the patient demand an exhaustive and detailed history. This may be conventionally and usefully divided into: I, Family History; II, Developmental History; III, History of Environment; IV, History of Mental Development. It would not be fair to burden you with the elaboration of the data. The family history should be of the usual type, but particularly pertinent is the occurrence of mental disease, neurosis, suicide, feeble-mindedness, criminality, organic disorders of the central nervous system, epilepsy, alcoholism, lues, and tuberculosis in ancestral and collateral branches of the family. In the developmental history is contained a record of the antenatal situation, of the birth of the patient, of health during infancy and childhood, of deformities, convulsions, head injuries, the age of teething, walking and talking, sex habits, enuresis, habits of sleep, somnambulism, night terrors, frights, shocks, etc. The manner in which the boy or girl met the strain of puberty is noteworthy. The history of environment should give a true picture of the surroundings in the home, familial harmony, parental control, economic status, recreational facilities, etc. Briefly, the history of mental development is concerned with progress in school, special talents or difficulties, character of companions, kind of reading preferred, excellence or deficiency in athletics, and more especially the presence or lack of the competitive spirit and general behaviour. Of considerable value both in diagnosis and prognosis is a thorough understanding of the make-up or personality. Here is the end-result of reaction between individual and environment. The failure of a child to respond to the give and take of reality and to become properly socialized may be the first warning of the most malignant of all mental diseases—dementia præcox.

Physical Examination

It seems superfluous and almost impertinent to dwell on the necessity of an intensive physical examination. Its tremendous importance and close connection with neuropsychiatric problems of childhood cannot be overestimated. Not infrequently the relationship is directly causal.[1] During the past four years 50% of the children who were brought to the clinic of the Pennsylvania Hospital as deficient or retarded had underlying physical factors sufficiently grave to explain their mental dullness. Unfortunately, the ordinary, usual, and so-called routine examination will not suffice. When they are somatic, the causes of retardation, neurotic states, psychoses, "nervousness," malbehaviour, delinquency, and the like may be far beneath the surface, and sometimes complicated diagnostic procedures are needed to unearth them. Much gravel must be washed before "pay dirt" is struck. Laboratory investigations are so commonly neglected that it seems reasonable to urge their employment. Blood counts, Wassermann reaction, examination of the feces, etc., may solve a puzzling case. The x-ray not infrequently throws diagnostic light on dark places. Much maligned endocrinology is not to be forgotten. If tempered with scientific caution, its application may at times produce brilliant results.[2] When required, one should not hesitate to call for liberal consultation. One might continue on this theme for hours, but the situation referable to the physical examination of children suffering from neuropsychiatric disorders may be summed up in a single sentence. Unless the examination is so thorough that it leaves no reasonable doubt, then it is useless.

Since Dr. Leavitt's presentation is exclusively devoted to the neurological examination, I will merely mention that it is always necessary to determine the status of the nerve system—central and peripheral. An interesting example of the far-reaching effect of brain inflammation is to be found in the conduct disorders in children which are sequels of epidemic encephalitis.

Mental Examination

Perhaps the first thought is that a mental examination is a highly specialized procedure, which should be undertaken only by one who has had years of appropriate experience and who is acquainted with the exact technique. This may be true, if the investigation is to be exhaustive enough to inquire minutely into the functioning of the perception and apperception, association processes, etc. Generally such refinements and detail are not imperative. For practical purposes, I do not believe that a formal mental examination is essential. Any physician who understands children and who has a working idea of the normal psychology of childhood will obtain more worth while information from a series of informal and sympathetic interviews than can be accumulated by means of a rigidly stereotyped method of approach. It is remarkable how freely children reveal themselves to those who have gained their confidence, particularly when they do not feel that they are being tested. Surely there is no specialist who is better equipped to make the proper kind of contact than the pediatrician. He sees children professionally every day, at every age from infancy to puberty, and in every grade of sickness and convalescence, and in health. To be successful he must understand their "ins and outs" and know just how to handle them. Unconsciously he acquires a degree of insight, which if properly applied will make him highly proficient in his judgment of the mental reactions of childhood. Actual psychoses are rare until the age of puberty, and then dementia præcox begins to make its appearance and when well-developed, its signs are usually unmistakable. More frequent are minor abnormalities. If the pediatrician as a result of his observations is able to satisfy himself as to the type of personality, the condition of the emotional life, attention, memory, the attitude toward environment at home, in school, or with playmates, inclinations and dislikes, ambitions, reaction to sex information already acquired, and habits, then he will be in an excellent position to pass judgment on the character and gravity of such abnormalities.

Psychometric Examination

A psychometric examination is a method of measuring the intelligence. It may be elaborate, complicated and time-consuming, or it may be fairly brief and simple. Sometimes in an obscure case it is advisable to seek the aid of a psychologist, but for daily practice an understanding of the standard tests which can be readily acquired and a certain amount of experience will enable any intelligent physician to estimate the intelligence rating without too great an error margin. For routine employment I recommend the Terman revision of the Binet scale. Some of the criticism directed at psychometry is undoubtedly justified. The claims of certain groups of over-enthusiastic psychologists have been responsible for the impression that intelligence testing is *the* all important method of neuropsychiatric diagnosis. In reality it is merely a useful adjunct. It is the tail of the dog. Sometimes it is a considerable tail and sometimes an insignificant one, but scarcely ever is it so important that it wags the whole dog. If the following considerations are kept in mind and due allowance made for them, then psychometry will materially assist the pediatrician in his medical judgment of children: 1. An intelligence test is never infallible and only approximately correct. 2. When the mental level is above the twelfth year, the tests are of very little value. 3. A psychometric test measures the intelligence, but nothing else. It gives no information concerning the emotions or moral sense. 4. Unless the child understands the requirements thoroughly, the test is not valid. 5. Certain factors such as language difficulty, lack of coöperation, fear, emotional upheaval, etc., will interfere greatly with accuracy. 6. Scarcely ever is a diagnosis to be made solely from the result of the test. The findings must be interpreted in the light of entire neuropsychiatric examination.

DIAGNOSIS BY EXCLUSION

We may now assume that all the examinations, physical, neurological, mental and psychometric have been concluded, and the history is as complete as can be obtained. The physician is now in a position to attempt a diagnosis: For the newcomer in the field of neuropsychiatry, and perhaps even for the expert, the process of diagnosis by exclusion is extremely satisfactory. It reduces the likelihood of error and since many possibilities must be reviewed in each case, it has the advantage of constantly sharpening the diagnostic sense. Has the child a *psychosis?* Such a diagnosis has grave implications and unless the signs and symptoms are clear, it should not be made. However, if there are permanent and positive emotional alteration or reduction or persistent hallucinations and delusions, it must be seriously considered. Actual insanity is quite rare in childhood.[3] Is the child *feebleminded?* Again, this diagnosis carries with it a hopeless future, usually in an institution. Unless the evidence is beyond cavil and there is no discernible physical, psychogenic, or environmental reason to account for the complete lack of progress in school, the inability to meet ordinary situations as other children do, and the definitely low psychometric rating, it is far more desirable to regard the patient as merely *mentally retarded,* at least for the time being. Many a boy or girl, who has been brought to the clinic or private consulting room with a lay diagnosis of mental deficiency because of "dullness," "backwardness," or "can't get on in school" and with the request that he or she be sent to a public or private hospital, has been restored to a normal level by a proper refraction of vision, the removal of adenoids and tonsils, the treatment of an endocrine dysfunction, the correction of a grave nutritional disorder, or by the readjustment of a faulty environment, or the resolution of a mental conflict. Is the child an *epileptic?* Idiopathic epilepsy is a dread disease, but, particularly in children, there are reflex convulsions dependent on an irritative focus or constitutional disturbance, in which the prognosis is more hopeful. These should be carefully eliminated. Has the child organic *neurological disease?* Poliomyelitis and encephalitis with their sequels, Little's disease, the muscular dystrophies, lues, etc., have their distinctive earmarks which may be discovered in the routine examination of the nerve system. Has the child a *psychoneurosis?* Typical neurotic states are not very common, but when they occur there is a fairly close resemblance to similar conditions in adults. To be kept in mind are the disassociation and somatic stigmata of hysteria, the introspection and invalidism of neurasthenia, and the phobias of psychasthenia. If the child does not fall into one of these clear-cut groups, there remain a number of minor classes, which, if anything, are more frequent than the major disorders. Here belong so-called "nervousness," malbehavior, and oddities of conduct, delinquency, precociousness, psychopathic states, and abnormalities of make-up. These conditions are nonspecific and to search for an etiological agent which is always responsible is to chase a will-o'-the-wisp. A variety of factors may be operative and complete diagnosis and successful treatment is absolutely dependent on the recognition of all of them. In other words, the diagnostic approach must be highly individualized. However, there is a type of personality which is so often a forerunner of dementia præcox that it deserves separate attention. "These children are a curious combination of child and adult. Intellectually they are often precocious. Socially they are not boisterous, vivacious, or openly inquisitive, but show a passive resistance to their environment. They do not enjoy play with other children, are much alone, and do not readily confide their thoughts to others, even to their parents. They are unduly sensitive and often absent-minded and dreamy. On such a basis many develop distinct seclusiveness and a gradual withdrawal from practically all human contacts. This is essentially dementia præcox, the preëminent psychosis of adolescence."

VALUE OF AN ETIOLOGICAL-THERAPEUTIC DIAGNOSIS

In no department of medicine does the mere naming of a disease mean less than in neuropsychiatry. In internal medicine and sometimes in pediatrics, correct diagnosis opens the way to standardized and usually successful therapeutics. For instance, the designation typhoid fever, pneumonia, or diphtheria carries with it a well recognized form of treatment. Unfortunately such diagnostic opinions as psychosis, psychoneurosis, mental retardation, "nervousness," malbehaviour, delinquency, etc., do not have appended universally applicable forms of therapy, particularly in the neuropsychiatry of childhood. Here, exact labelling may be a source of satisfaction to the diagnostician, but it means little or nothing to the unfortunate child and its parents. The placing of a child in one of the groups enumerated does not constitute a proper diagnosis, which, to be useful, must often be manifold and include physical, neurological, psychometric, environmental, and social factors. This kind of diagnosis is not an academic consideration, but a very practical one on which hinges effective treatment. Therefore, all the causative factors must be apprehended. To neglect a single factor is to court failure. A child of ten was brought to the clinic for examination. The complaint was malbehaviour, amounting to delinquency (lying and petty stealing). A physical and neurological study revealed the sequels (paresis and atrophy of leg muscles) of poliomyelitis from which the child had apparently suffered at the age of 3. Here, in a sense was a diagnosis, yet it did not explain the behavior abnormalities. However, careful observation of the boy, a mental examination, and a review of the history brought out the information that the patient had a distinct feeling of inferiority based on the fact that on account of his physical handicaps he could not take part in the games and activities of other children. He found himself neglected and sometimes ridiculed. Therefore, to attract attention, to "get a place in the sun" as it were, he resorted to the expedient of misbehaving. As a result of complete examination, therapeutic possibilities came into view which never would have appeared if the examiner had been satisfied with his discovery of the residuals of infantile paralysis. A sensible explanation to the child, his reëducation, and the pointing out of channels of activity in which he might hold his own or even excel, together with help and encouragement from family and others far exceeded in therapeutic importance the fitting of braces to the crippled limb. Several examples of a diagnostic summary sheet may illustrate the meaning of the etiological-therapeutic diagnosis.

Case I

Name: A. K. Age: 10. Diagnosis: Delinquency. Lying, stealing.

History	Family—Mother "nervous."	
	Developmental, Environmental, Mental development	Fever followed by weakness of leg at age of 3 (poliomyelitis?). Has been sullen, morose, and seclusive. Envious of other children.
Examination	Physical—Underweight. Neurological—Paresis and atrophy anterior tibial muscles right leg. Mental—Reveals sense of inferiority. Is worried because other children will not play with him and "make fun" of him. Psychometric—Normal.	
Recommendations	Brace to palsied limb. Explanation to and reëducation of child and family. Encouragement to take up activities in which physical handicaps will not interfere.	

Case II

Name: J. D. Age: 9. Diagnosis: Mental Retardation.

History	Family—Negative.	
	Developmental, Environmental, Mental development	Poor health following scarlet fever at 5. Parents foreign and English is rarely spoken at home. No one at home to help child with lessons. Child never has had enough nutritious food and is given little milk. At first liked school, but during past few years "hates" it.
Examination	Physical—Hypertrophied, infected tonsils. Adenoids. Vision defective. Underweight. Neurological—Negative. Mental—Normal. Wants to leave school. Psychometric—Binet Test—age 7 yrs. I.Q. 77.	
Recommendations	Removal tonsils and adenoids. Correction visual error. Instruct family as to suitable food. One quart milk daily. Explain situation to family and encourage them to speak English. Secure coöperation of school authorities and see that child is given suitable help with school work.	

CASE III

Name: E. X. Age: 11. Diagnosis: Psychoneurosis —psychasthenia.

History	Family—Father dead. Was periodical alcoholic. Mother "nervous."	
	Developmental, Environmental, Mental development	Only child. Masturbated frequently from 6 to 11. Mother has always been over-solicitous concerning his health. Never permitted him to play "rough" games and usually kept him indoors. Never had a chum. Began to be abnormally interested in his own health at an early age. Reads too much.
Examination	Physical—Right lung apex suspicious. Secondary anemia. Underweight. Neurological—Negative. Mental—Introspective. Precocious. No delusions, but thinks that masturbation may have permanently injured his health. Psychometric—Binet Test—age 14 yrs. I. Q. 127.	
Recommendations	Plenty of sunshine and fresh air. Sleep in open. Milk and raw eggs. Outdoor games. Summer camp. Reëducation of mother to normal attitude toward child. Sensible explanation to child concerning masturbation. Suggestion therapy.	

MINIMUM REQUIREMENTS FOR THE PEDIATRICIAN

The amount of new knowledge which must be acquired before one is competent to cope with the usual neuropsychiatric problems of childhood is not beyond the reach of even the busiest pediatrician. There should be some appreciation of the normal psychology of child life. Imitativeness, suggestibility, love of power, curiosity, savagery, romanticism, and other phenomena occur in the growing child at various stages of development and unless they exceed average limits they need not occasion great concern. Often they may be turned to good account. For instance, from imitativeness which is such a pronounced characteristic in young children, parents and nurses should learn a simple but important lesson: Do not say or do things you do not want the child to say or do. Again, a nervous, fidgety mother often has nervous, fidgety children. At adolescence stealing and lying constitute delinquencies, but sometimes they may result from the accentuation by unwise handling of traits which are perfectly normal in early life. No one expects an infant to have a sense of property right and every one knows that there is a time in life when the boy or girl gives free rein to elaborate fancies. Common sense psychology does not require long preparation and arduous study and is certainly not beyond the ken of the pediatrician. Indeed, it is difficult to think of any specialist better fitted for the understanding of children than the pediatrician whose work necessitates the closest contact with child life at every age. Often, it is only a question of proper application of knowledge and experience to a concrete problem.

In addition, the pediatrician should recognize the necessity of an exhaustive history. He should be just as thorough in his inquiry concerning facts which may have a bearing on the condition of the mind of the patient as he is in eliciting information which may throw light on the state of the body. He should realize the value of a complete investigation and be prepared to employ every refinement and advance of modern medicine. He should know the essentials of a neurological examination. It should not be expected that the pediatrician will be able to diagnose rare and obscure organic neurological diseases, but at least he should be conversant with the signs, symptoms and sequels of such common affections as poliomyelitis, meningitis, encephalitis, chorea, etc. From his observation of the child, he should be prepared to form judgment as to the mental processes and to decide in most instances the questions of actual or potential mental disease or abnormality. Perhaps, the case will not be properly classed and typed, but at least the existence of insanity will not escape attention at a stage when something may yet be accomplished, nor will the signals of approaching danger be disregarded. Even more necessary than expert knowledge is the cultivation of the neuropsychiatric viewpoint. In practical terms this means that the pediatrician believes that the health and well-being of the mind is at least as worth while for the child as is the health and well-being of the body. As a matter of fact the two are inseparable. If the pediatrician takes this *complete, all-round* attitude which is really the neuropsychiatric attitude, then he will guard the minds of his patients against sources of future disturbance just as carefully as he protects their bodies from infection and disease. Furthermore, he will be just as energetic in taking steps to eject the troublesome and dangerous material from the mind as he is, for example, in eradicating the membrane of diphtheria from the throat.

MENTAL HYGIENE OF CHILDHOOD

I need scarcely remind you that this is the age of prevention and prophylaxis. What might be termed the pre-sick stage, that is, before definite pathology has become established, is the period on which scientific attention in every department of medical art, internal medicine, surgery, pediatrics, etc., is sharply focused. Witness the life extension institutes, the activities of life insurance companies, the so-called "well" clinics, and the like. Mental hygiene, after it has been divested of certain fanciful interpretations and elaborations, contains a practical doctrine. The primary object of the mental hygiene movement is the reduction of the incidence of mental disease, feeble-mindedness, and other aberrations or defects of the mind. The field is a large one, but effective preventive measures are by force of circumstances narrowed down to a very small compass. It is true that if eugenics were open to scientific control much could be accomplished. It is true, likewise, that something has been done and much more can be done to cut down the heavy mental toll taken by the syphilitic, alcoholic, industrial and occupational insanities. Eventually, too, we may hope to make some measurement of both somatic and psychogenic strain and take steps to lessen their destructive effect. However for the present, all these things are as only a few drops in the bucket compared with the prophylactic opportunity offered by the young child. Here is plastic material; here are environmental factors and the possibility of controlling them; influences to be suggested; training to be directed; personality to be built up with sensible and serviceable assets. The time may come when neuropsychiatrists will be privileged to do the bulk of this constructive and preventive work, but just now they are barred from the major portion of it. Too often, when they are called, it is to face an established, well-advanced, and sometimes hopeless problem. Not infrequently the causal agents are buried in the remote past and, even after they have been unearthed, little can be done, since the reactions which they produced have become fixed by time. There are just two physicians who are so situated that they may become brilliant and successful opportunists in the prophylaxis of mental disease; the one is the general practitioner, the "family doctor," and the other is the pediatrician. A concerted effort on their part, and perhaps particularly on the part of the latter because his interests are not so diversified and he restricts his practice to children, will do more to insure the mental health of future generations than any measure that has ever been devised.

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DISCUSSION

Dr. Charles W. Burr (Philadelphia, Pa.): There is one question I should like to request both pediatricians and physicians in general not to ask of psychiatrists, namely, "What is the mental state of such and such a child?"—such and such a child being anywhere from three days to six months old. The newborn baby has no mental state; it has nothing but a spinal cord and basal ganglia. It hasn't anything at four months worth speaking of, except some memories that are largely unconscious. But one of the great steps forward in the really new psychology has been the study of the psychology of infant life. No man can do that better clinically than the physician who intimately meets the baby as the alienist does not do. With all the troubles of infantile life the pediatrician ought to be a better psychologist, so far as children are concerned, than any psychiatrist of adult life, because he gets to see the children all the time and we do not.

I want to say a word about these mental tests, notably the Binet test. They are not worth very much. The thing that counts in child or adult is not ability to do a trick quickly, not ability to stick round pegs in round holes more quickly than other adults, but character. Now, character begins to develop as soon as the child begins to have any mind at all. Very soon after that dawns, or ought to dawn, the conscious sense of right and wrong, and the Binet test, or any modification of that test, is no guide to the presence or absence of the one thing that makes the boy or girl into a worth while man or woman, namely, character. They are not really much as a mental test, because most of them are largely tricks. A child living within himself and thinking thoughts that probably are much higher than those of the examiner, may treat the whole thing as a joke. I have seen this, and when a young child treats tests as a joke, certainly those tests cannot be of much value in testing that child's mentality. I think the forty-five minutes to an hour and a half required to put a child through these tests could be used to very much greater advantage in other ways to determine what sort of an adult that child is going to be.

I think really the child whose mind is interesting to study—of course, I do not mean the little baby, but the six year old, the eight and ten and twelve year old—is not the common ordinary garden variety of boy or girl that is going to grow up with the mentality to work with the pick and shovel, but the boy who may on the one hand have within him the development of talent or even of genius, or the boy who may have in him a strong tendency toward crime. These two are the ones that we ought to pay careful attention to, because genius needs guidance vastly more than the common boy. The common boy can get through life and reach his level and do his work if he is let alone, but the boy of genius oftentimes, unless he is guided mentally right, instead of becoming a genius for good develops into a genius for evil. I have lived long enough to see that many times. The really useful psychiatrist is not the man that knows all the metaphysical explanations of mind, but the man who can take one of these boys or girls, so evenly balanced that if their environment goes more one way or the other their lives will be useful or useless, good or criminal, and direct their parents how to guide them along proper lines. That man is in the way of doing a tremendous work.

Dr. Strecker (in closing): Dr. Leavitt has made a valuable contribution. It is not so much that he has indicated the proper method of neurologic examination, which is important; but even more important is the way in which he has indicated the relationship between neurological diseases in childhood to your specialty as pediatrists and to some other departments of medicine. I should like to elaborate this point.

Pediatricians are often consulted concerning conduct disorders in children ranging from mere bad behavior to serious delinquency. They may discover that there is in the case a direct relationship between, let us say, head injury or encephalitis and the troublesome behavior. Again, oddities of conduct and even serious defects of personality may be resultant upon a previous attack of poliomyelitis, not because certain anterior horn cells have been destroyed, but because the muscular disability has prevented participation in those activities of childhood which favor normal physiological and psychological growth and development. Thus, we get a conception of the importance of such presentations as Dr. Leavitt's before a section devoted to pediatrics. Neurology, and particularly the neurology of childhood, is not an isolated subject, and neurological diseases are not unrelated symptom groups to be worked out, tabulated, diagnosed, and then pigeon-holed. They are subjects of great interest to pediatricians, both in their active phase and in the direct and indirect effects they produce.

To know the essentials of examination such as Dr. Leavitt has outlined, and to use such knowledge routinely in dealing with children, cannot but be an asset to the pediatrician. To make a neurological examination is not a difficult matter, and with the general landmarks which Dr. Leavitt has stressed—such as the importance of familial types, the influence of heredity, and the physiological variations peculiar to children—the pediatrician will at least be able to recognize the existence of organic nerve disease. Even if he should not go to the point of typing it accurately, he will still, from the fact that he has recognized its existence, be able to give advice and help which will minimize the deficit—organic and psychological—which may have been produced.

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The reported case emphasizes the importance of elaborate diagnostic studies.

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EVALUATION AND TREATMENT OF ABNORMALITIES IN BLOOD PRESSURE*

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Recently, so I am informed, a life insurance company instructed its medical examiners to dispense with blood pressure readings. If true, that is as irrational a practice as the other extreme which gives to blood pressure abnormalities the value of disease entities and bases a definite prognosis upon them. As a general rule, hypertension is merely a symptom and one that must not be overestimated in an analysis of morbid conditions. So much has been said and written about it, however, that the laity have become nervous and not a few physicians uncertain in their attitude toward it. There is much that is unknown about hypertension, due in part to the fact that we have not completely mastered the enigma of the remarkable constancy of the pressure in health.

The heart, the arteries, the capillaries, all share in the maintenance of blood pressure, but above and supreme sits the nervous system, through which the proper interaction of all the forces, heart, vessels and capillaries, is regulated and controlled. The very fact that the blood pressure is instantly and adequately responsive to changes in the external and internal environment makes it improbable that purely mechanical agencies are at work. Like the heat regulation in warm-blooded animals, it is a profound, complex, biologic phenomenon.

I have said that hypertension is usually a symptom. By that I mean that it is part and parcel of a general process and is not the essence of it. There is, however, one form of hypertension in which the high blood pressure is apparently the only abnormal phenomenon. Here it seems to constitute the essence of the process. The following case will illustrate this type.

Mrs. L., 54 years old, consulted me a short time ago on account of headaches; otherwise she is well. She had her periods regularly up to two or three months ago; none since. She is a slender, animated woman, weighing 95 pounds; has a good complexion and is really the picture of health, except that she is thin and has always been thin. To my surprise I found a blood pressure of 260 systolic, 160 diastolic, almost three times her body weight and five times her age. The heart was somewhat enlarged, the second aortic sound moderately accentuated with a slight, rather doubtful systolic whiff at the aortic area. The arteries are perfectly soft, the pulse if anything, small and not of high tension. Vision is good, the eye-grounds are healthy. The urine is practically negative and the renal function tests show no impairment of the activity of the kidneys. From her son, a physician, I learn that she had a high blood pressure for many years.

How shall we interpret Mrs. L.'s hypertension? Her case is interesting from three points of view: cause, prognosis and treatment.

With regard to the cause of the hypertension—we would naturally look first for the two conditions which, singly or together, are most frequently in close relation to hypertension, namely Bright's disease and arteriosclerosis. As far as our tests go, there is no evidence in Mrs. L. of either of these conditions. There are those who hold that every case of hypertension, if the blood pressure is over 200, is nephritic in origin. Schlayer (Münch. Med. Woch. 1913, page 63) says that he has never seen a case of hypertension without visible changes in the kidneys at autopsy. The late Theodore Janeway held the same view. I cannot see why we should assume that the kidneys are diseased when there is no evidence of disease. To be sure, at the end of life, at autopsy, the kidneys show structural changes; but may they not be secondary to a long-continued hypertension, since the kidneys are directly and decidedly responsive to changes in the general blood pressure? Kalb (Deutsch. Med. Woch., June 2, 1922) examined 288 cases of hypertension without finding evidence of affection of the kidneys.

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* Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 3, 1923.

In this type of case arteriosclerosis is not demonstrable during life in the accessible vessels—the temporals, the radials, the retinal arteries—or in the aorta roentgenologically. The hypothesis has been advanced by a group of German clinicians, Romberg, Hasenfeld and Hirsch, that the primary cause is arteriosclerosis of the splanchnic area, but that is by no means proved. The hypertrophy of the heart which some might consider to be a cause of the hypertension is a consequence of it, though when once established, it may have a share in keeping the blood pressure high.

If we rule out Bright's disease and arteriosclerosis, what is there left to explain the hypertension? The best explanation, it seems to me, is that which assumes the presence in the blood of a toxic agent that has the power of raising the vascular tone. We know that the adrenal secretion and the pituitary secretion are both powerful pressor agents. It has further been shown that certain amins in small doses have pressor properties. The toxic substances may be of intestinal origin or they may have something to do with the endocrine glands for it is an outstanding fact that the type of hypertension with which I am dealing is found oftenest in women about the menopause. As a rule, the gonad insufficiency or nonfunction is associated with obesity as well as hypertension. In the case I have described adiposity does not exist.

It must not be imagined that the hypothetic toxin produces a vasomotor spasm. That is difficult to conceive as a permanent thing. Rather, as suggested by Pal, there is a heightened general tonus; in other words, a new rest position for the vessels by which the peripheral resistance is increased and the pressure raised.

Since the epoch-making work of Krogh on the capillary circulation, the thought has suggested itself that the hypertension is dependent upon increased capillary resistance. According to Boas and Frank, however (Journal American Medical Association, October 21, 1922), the capillary pressure is generally low in the so-called essential hypertension, which is the type with which I am dealing. In glomerulo-nephritis with hypertension, the capillary pressure is usually decidedly above normal. Nevertheless, it is important to realize that for the height of the blood pressure the difficulty of outflow at the periphery is probably more important than the action of the heart. The narrowness of the peripheral vessels is not necessarily due to sclerosis, but may be due to a lessened elasticity, either the result of an actual vasomotor constriction or of a heightened general tonus, as suggested by Pal.

A rather novel theory, based so far chiefly on theoretical considerations, is beginning to attract attention. The depressor nerve has its origin in the wall of the aorta and runs through the vagus to the medulla. It is believed to have an important function in regulating the blood pressure. Bittorf and others have suggested that disease of the nerve in sclerosis of the aorta might deprive the body of this regulatory mechanism, thereby leading to hypertension, with all its consequences. Wenckebach, with the same thought in mind, has recently advocated section of this nerve for the treatment of angina pectoris. Histologic evidence of disease of the depressor nerve in cardiac hypertrophy is still wanting. Ludwig (Berl. Klin. Woch., 1912, 1461) examined the nerve in 100 cases of cardiac hypertrophy without finding any changes in it.

To sum up, we are ignorant of the fundamental cause of the hypertension in cases like Mrs. L.'s, and are compelled to designate it by the terms essential, arterial or vascular, terms that are both a confession and an avoidance.

Essential hypertension is in many respects the most important with which we have to deal, because if properly appreciated, it is not a serious condition and is compatible with long life, provided the patient is not overtreated. It seems to be in the typical case the only abnormal condition, whence we are quite justified, it seems to me, in classing essential hypertension as a distinct disease.

Let me epitomize the chief features of the condition: (1) The patients are chiefly women at or past the menopause. (2) The majority are overfat and below average height. (3) As a rule, they belong to the better circumstanced classes of society and have borne children. (4) They show few untoward symptoms. When symptoms do appear, they are quite trivial—ringing in the ears, usually in one ear; a little dizziness, headache, irritability, fatigability. Later on, of course, graver symptoms develop, because the function of one or another organ becomes impaired. (5) The systolic pressure varies from 180 to 250, or even up to 300 systolic; the diastolic from 120 to 170. (6) The heart is usually enlarged, the second sound may be accentuated but often is not nearly as loud as one would expect from the height of the arterial pressure. The accessible vessels are soft. (7) The urine shows nothing abnormal, either quantitatively or qualitatively. The treatment I shall discuss later.

I shall now illustrate another type by the brief recital of a case.

Mr. H., 53 years old, came to me in November, 1913, on account of twitching of the eyelids, and also because, two months before, he had been denied life insurance by reason of high blood pressure and of albumin in the urine. He seemed healthy in appearance but physical examination showed some enlargement of the heart and a definitely accentuated second aortic sound, and very stiff arteries. The blood pressure was 165 systolic. The eye-grounds were normal, the Wassermann negative. Aside from traces of albumin, the urine at that time contained nothing abnormal. Occasional occipital headaches brought him to me infrequently in the following years. In May, 1918, he consulted me because of frequent urination at night. The urine showed traces of blood and a few leukocytes; the blood pressure was 175/105. An x-ray examination showed a stone in the right kidney. In 1920, the first symptoms of angina pectoris appeared. The blood pressure was unchanged. In April, 1923, the patient came for a health examination, saying he felt fine, had no headache, no vertigo, no anginal or other attacks. I found the blood pressure 194/120; the arteries much harder and tenser than they had been. The urine still contained a little blood, at times uric acid and oxalate of lime crystals, and had a specific gravity ranging from 1009 and 1022.

The type of hypertension exhibited by this man is quite different in origin and prognosis from that presented by the previous patient.

In Mr. H. we are dealing with a progressive arteriosclerosis and probably mild renal changes. As far as one can tell, the pressure here is associated with arteriosclerosis, but it is difficult to say which is the primary and which is the secondary condition. Personally, I believe that the hypertension precedes the arterial thickening.

Friedrich Müller (Münch. Med. Woch., 1923, No. 1) believes that arteriosclerosis and hypertension are both due to the same cause—some vascular poison. Dr. J. M. DaCosta, many years ago, in a classical paper, spoke of the albuminuria and Bright's disease due to uric acid. The patients in this group belong to the type so well described by him, although uric acid is no longer looked upon as the *agent provocateur*. In DaCosta's day, the taking of blood pressure was unknown.

We find this form of hypertension in patients who are subject to great nerve strain, nerve strain coming in accesses, each one of which causes a jump in the blood pressure. They are also habitual over-eaters, often excessive smokers. Many used to drink, and perhaps still drink a considerable amount of alcohol, but I have never been able to persuade myself that alcohol is a cause of high blood pressure.

Much has been written about focal infection. While I am convinced of the importance of this in the production of localized forms of vascular disease, I do not think that it plays any part in a general hypertension. It is, however, capable of bringing about disagreeable or even serious incidents in an existing case of high blood pressure.

The characteristic features of *arteriosclerotic hypertension* are as follows: (1) The male sex decidedly predominates. (2) The ages range from 40 to 60 and over. (3) The kidney function, as demonstrated by the usual tests, in the early stages is normal. There may be traces of albumin, a few red blood cells and occasional hyaline casts. Uric acid and oxalate of lime crystals are abundant. (4) The heart is slightly enlarged; the second aortic sound loud and sharp. (5) The blood pressure ranges from 160 to 220 systolic, and from 80 to 140 diastolic. (6) The temporal arteries are thick, tortuous and prominent; the radials tense and hard, feeling like thick-walled rubber tubing. (7) Symptoms are absent for years; at times, there are attacks of renal colic due to the passage of gravel. Headache is rather common, especially in the occipital and nuchal regions. Later, transient palsies, aphasia, and other symptoms of vascular crises appear. The patients are usually plethoric and choleric. (8) Death occurs from angina pectoris, apoplexy or circulatory failure, rarely from uremia.

The most serious of all types of hypertension is one that I would call *primary or pernicious nephritic hypertension,* which Volhardt has justly called malignant.

The primary cause of the hypertension appears to be a progressive glomerulo-nephritis, the origin of which is often shrouded in obscurity. A striking feature of the condition is its occurrence in comparatively young persons, from 25 to 35. I think I may safely say that hypertension in individuals under 40 is nearly always due to glomerulo-nephritis.

While the disease of the kidney in this form is apparently the primary thing, we do not know how it brings about the hypertension and the associated arteriosclerosis. Whether it is the absence of an internal secretion of the kidney or whether it is the failure on the part of the kidney to eliminate metabolic as well as exogenous poisons, I do not know. There is, it seems to me, an analogy between the islands of Langerhans of the pancreas and the renal glomeruli. When the former are diseased, diabetes mellitus ensues through the loss of insulin. May there not be a *glomerulin* which has an important function in the body, the absence of which expresses itself in wide-spread arterial disease with hypertension? Or, do the glomeruli in health excrete a poison which, retained when they are diseased, causes hypertension and cardiovascular disease with hypertrophy of the heart?

The clinical features are so typical that I think we are warranted in calling the condition a disease entity. These features are: (1) The patients are comparatively young, from 25 to 40 years, men more frequently than women, the ratio being, I conjecture, about four to one. (2) The systolic pressure reaches great heights, from 250 to 280 or more; the diastolic is also very high, being 130 to 170. (3) The accessible arteries are tense, hard, thick, tortuous and prominent. The heart is greatly hypertrophied; the second aortic sound is loud and metallic; gallop rhythm at the apex is common. (4) There is usually pronounced anemia, so marked at times that progressive pernicious anemia is suspected. (5) Late in the disease a tendency to the hemorrhagic diathesis develops. (6) The urine is pale, watery or opalescent, fairly abundant and contains large amounts of albumin. (7) The concentration in the blood of nonprotein nitrogen (urea, creatinin and uric acid) reaches extraordinary heights. The phenosulphonphthalein output is greatly reduced, sometimes nil. (8) Changes in the ocular fundus and exophthalmus are common. (9) Convulsions occurring in series are common. (10) Psychoses, usually of the maniacal type, may occur. (11) Slight dropsy is frequent. (12) Pericarditis or hemopericardium is a common terminal condition.

Senile Hypertension: I am not altogether certain that we ought to rank senile hypertension as a special type, and yet there are certain features that make its incorporation in other groups difficult. We find in many persons of advanced life, past the age of 70, a hypertension with blood pressure as high as 200 or 220 systolic, which is altogether symptomless and well borne, unless an unwise physician interferes with it. As a rule, the diastolic pressure is low, ranging from 80 to 100. I have in my care a woman of 89 years, whose blood pressure is from 180 to 220 systolic, 100 diastolic. Except for a little intestinal indigestion and occasional nocturnal cramps in the legs, she feels perfectly well, has a keen mind and an excellent memory. Such a patient should be left alone. As Thompson and Todd (Lancet, Aug. 26, 1922), well put it: "It is best not to tamper with the individual in order to treat a diagnosis."

Midway between the primary pernicious nephritic hypertension and the arteriosclerotic hypertension, is a type that I would call *hypertension with mild nephritis.* The following case illustrates this type:

Mrs. F. S., 62 years old, widow. Her complaints are trivial and frequently she comes merely for an examination when there are no complaints. She has had from time to time a little vertigo, coldness and numbness of the extremities, fugitive pains of rheumatic character, a little shortness of breath. Her blood pressure is 240 systolic, 100 to 105 diastolic. Her weight 1[illegible]5 pounds. Albumin has been found in the urine since 1907. It has been present in moderate amounts ever since she came under my care, six years ago. Occasionally there are hyaline casts, pus cells and red blood corpuscles. The specific gravity ranges from 1005 to 1022. The daily quantity is normal, at times a little increased. On rare occasions, traces of sugar have been found. The heart is moderately enlarged; on auscultation there is a loud rough systolic murmur over the entire precordia, without accentuation of the second aortic sound. The accessible arteries are as soft as in youth.

Here we have a patient who has had high blood pressure for many years, evidences of nephritis for sixteen years, and who is yet in a fair state of health. The hypertension here is undoubtedly a conservative process.

The features that characterize this type are as follows: (1) The majority of patients are beyond middle age, short but not unduly stout. (2) The heart is enlarged, and systolic murmurs are often present. (3) The accessible vessels are soft. (4) Symptoms are absent, except mild ones, such as dizziness, ringing in the ears, slight shortness of breath on exertion, and nervousness. (5) The energy and endurance of the patients is often surprising. (6) The blood pressure ranges from 160 to 240 systolic and from 100 to 140 diastolic. (7) The urine is usually normal in quantity or diminished, contains considerable albumin, a moderate number of tube casts, at times red blood cells, frequently leukocytes in large numbers, occasionally sugar. (8) Duration, many years. (9) Death usually occurs from circulatory failure—hydrothorax, dropsy and other modes of decompensation.

One other group may be separated from the great hypertensive family, namely that in which the hypertension is associated with *hyperthyroid* symptoms. In this group fall some cases of exophthalmic goiter, but it is made up chiefly of cases that do not have a palpable goiter. The characteristic features are as follows:

(1) The patients are usually women past middle life. (2) Arteriosclerosis may or may not be present. (3) The heart is moderately enlarged, but usually without valvular defect. (4) The blood pressure, both systolic and diastolic, is high—140 to 240 systolic, 120 to 150 diastolic. (5) The following symptoms of thyroid overactivity are present: (a) tachycardia, (b) tremors, (c) nervousness, (d) sweats. The eyes are strikingly bright, but not exophthalmic; the basal metabolism is either normal or somewhat elevated. (6) There may be albuminuria. (7) Some of the patients in this group have shown extremely swarthy complexions. The signs and symptoms point to endocrine origin or to endocrine association. The menopause, however, is not a factor of prominence. I believe the thyroid is overacting although it may not be demonstrably enlarged. Substernal goiter was looked for in my cases but not found in those in which cervical goiter was absent. Death occurs usually from apoplexy or cardiac failure.

TREATMENT

In the treatment of hypertension, certain fundamental principles should be borne in mind.

Hypertension is in many cases a conservative process which is necessary if the blood is to be forced through a greatly restricted vascular territory. Therefore, it is often unwise to depress it by direct action upon the circulation, just as it is unwise, as a rule, to lower the temperature in fever by antipyretics.

Prophylactic treatment would be the ideal one if it were possible. It will become to some degree practicable when the families for whose health we are more or less responsible form the habit of coming to us for examination when they are supposedly well. If a tendency to a rising blood pressure is recognized early, much can be done to check its progress by the removal of all harmful influences, particularly those that cause frequently repeated accesses of increased blood pressure. Excitement, overexercise, gluttony, sexual excesses, must be eliminated. Likewise, worry and overwork with their concomitants of poor sleep and disturbed digestion. I am quite convinced that in persons in whom the blood pressure is gradually rising, tobacco in any large amount is harmful. (Bates: Journal of Comparative Psychology, Dec., 1922. Journal American Medical Association, Sept. 29, 1923).

Since anxiety is often due to the patient's fear of high blood pressure, the physician must take time to explain that high blood pressure has often no serious significance. Brooding causes a vicious circle in which the process "revolves the faster the more introspective the patient becomes." (Thompson and Todd, loc. cit.)

1. Under certain circumstances it may become necessary to interfere directly with the blood pressure, either by the use of drugs such as the nitrites or by other means. When the pressure is very high, 270 or over, or when a high blood pressure suddenly rises 20 to 40 points, nothing is as useful as venesection. Nature sometimes comes to the patient's aid with a nose bleed or with a hemorrhage from the intestines or from the uterus. Unfortunately, the hemorrhage is sometimes in the eye or in the brain.

Instead of bleeding from the elbow, one may leech from the temporal or mastoid regions. This method is particularly useful in patients whose symptoms indicate marked cerebral congestion.

Lumbar puncture, as recommended by Kahler (Wien. Arch. f. inn. Medizin, Nov. 15, 1921) and by Foster (Journal American Medical Association, Sept. 30, 1922) is also a valuable measure for bringing about a prompt reduction of the blood pressure.

2. Bowels. Daily free action without strain is important. Small doses of the salines or the saline mineral waters are useful. In some instances, however, excellent results are obtained, as Bishop points out, by means of castor oil. I am in the habit of giving an ounce once a week or once in ten days at the patient's convenience.

3. Rest. In certain individuals, especially in women with arteriosclerotic hypertension or with essential hypertension producing neurasthenic symptoms, the rest cure, complete or partial, is often of marked benefit. I have seen the blood pressure fall through a three weeks' rest in bed from 220 to 150, where it remained for quite a time after the patient was up and about.

When the rest cure is not applicable or when it is not indicated, an hour or two of rest after the noon meal and rest before dinner in the evening is beneficial.

4. Exercise. In all forms of hypertension, except when the kidneys are badly diseased, when the heart is incompetent, or when there is evidence of thyroid overactivity, exercise is permissible. It should be mild golf or walking, and must not be followed by the cold shower. It is wise to have the patient present himself for observation after he has taken some exercise.

5. Diet. In the majority of patients with hypertension, it is more important to lessen the quantity than to change the quality of the food. In the overfat the reduction treatment is of great value. In the construction of diet lists, differentiation of the types is of importance.

But there are certain general principles that are widely applicable.

The patient should avoid pastries, candies, rich dishes, fried foods, fresh bread, etc. It is well in many instances to restrict the foods rich in purins, such as sweetbread, liver and brains.

Of late years, there has been a growing tendency to limit greatly the salt intake, following in this respect the recommendation of F. M. Allen (J. A. M. A., Mar. 6, 1920, page 652). Allen restricts the salt intake to 0.5 grams a day.

O'Hare and Walker (Arch. Int. Med., Aug. 15, 1923), after careful study in which they subjected hypertension cases to salt restriction after the method of Allen, found no noteworthy effect on the blood pressure. By studying the blood chlorids in connection with the vascular tension, they were able to show that there was no relation between the height of the blood pressure and that of the chlorids in the blood. Their conclusions are that hypertension is compatible with normal blood chlorids and normal tension with high blood chlorids.

Houghton (Med. Record, N. Y., Mar. 18, 1922) leans to the view of Allen, and recommends a low sodium chlorid dietary. I think we may safely say that an excessive salt intake does harm and that the salt in the food should be reduced to as low a point as is compatible with the patient's comfort and the preservation of the appetite. I usually instruct the patient to add no salt or condiment to his food at table. There is no harm in a cup of tea or coffee.

Sansum, Blatherwick and Smith (J. A. M. A., Sept. 15, 1923) have recently called attention to the value of a basic diet in the treatment of hypertension in nephritis. They found that a diet rich in animal proteins, oysters, oatmeal, rice and some of the bread stuffs, has strongly acid properties and greatly increases the acidity of the urine compared with that of the body, as determined by the hydrogen ion concentration. A highly acid diet may make the urine one hundred times as acid as the body. Ordinarily the urinary acidity should not be greater than twice that of the body.

Vegetables, fruits, especially melons and oranges, potatoes, raisins and almonds, are strongly alkali producing.

By means of a basic diet, it has been possible to reduce the blood pressure and to lessen the albumin and casts in the urine.

With the foregoing principles in mind we may construct a dietary somewhat as follows:

Breakfast	Stewed fruit (without sugar) A cup of tea or coffee One egg One slice of toast.
Luncheon	A sandwich of lettuce, tomatoes or sardines, or Half a dozen oysters, or Poached or scrambled eggs, or omelet Cup custard, or water ice, or sherbet, or stewed fruit as dessert A glass or buttermilk or a cup of weak tea.
Dinner	A vegetable broth or cream soup Chicken, lamb chop or a small amount of fresh fish A green vegetable Salad or celery Stewed fruit.

6. Baths. It has been found, of late years, that the continuous warm bath has a very beneficial effect upon hypertension cases. The treatment is started with a continuous hot immersion bath. The first bath should be of five minutes duration and have a temperature of 105 degrees. While the patient is in the bath, the pulse rate and the blood pressure should be carefully noted. The treatment may be given daily, increasing temperature and time until the temperature reaches 110 degrees and the immersion three or four hours. Very good results have been obtained by the method at the Mayo clinic. (George E. Brown, Medical Clinics of North America, July, 1923, 221.)

Hypotension: Hypotension has not received as much consideration as hypertension. As a rule, it is a subordinate symptom, although many persons are now beginning to show as much concern over their low pressure as others have been accustomed to show over their high pressure.

In certain races, as in the youths of Canton (Cadbury: Archives Int. Med., Sept., 1922) and in certain Hindus from Lower Bengal (Francis McKay: J. A. M. A., Nov. 4, 1922) and in the Filipinos, the normal blood pressure is from 20 to 30 mms. less than in the people of Europe and North America. The diastolic pressure is also lower than the generally accepted normal but only by from ten to twenty-two mms.

There is a form of hypotension associated with subnormal temperature, bradycardia and great muscular fatigue which occurs at all ages and quite frequently in young and otherwise healthy persons. As a rule, the pulse is very slow, down to 50, 45 or even lower. The cause is difficult to find; it may be a sequel of an acute infectious disease, even simple tonsillitis, or of great muscular exertion.

Having seen a few cases of this type, I have come to look upon them as dependent upon an acute suprarenal insufficiency and on that basis have used suprarenal extract, apparently with success. It is possible that in those in whom the condition follows great activity of the muscles, some fatigue poison is circulating in the blood. But we know too little of the so-called kenotoxins.

Another form of hypotension that has interested me for some time is one I would call *constitutional hypotension.* This is found as a permanent feature in persons who are otherwise in fairly good health. They are subject to colds and have cold hands and feet, "poor circulation," and exhaust physically and mentally very quickly. I have been struck by the fact that in many of the patients under my observation indecision seems to be a noticeable attribute of their character.

The most profound hypotension is probably met with in cases of coronary thrombosis. I have seen the pressure drop from 220 to 100 in the course of a few hours and yet recovery took place.

Hypotension is also found associated in some instances with angina pectoris, perhaps through coronary disease.

I need say little about the *treatment of hypotension.* In cases of coronary thrombosis, the treatment is that of acute shock.

A word might be said about constitutional hypotension. That requires a general making-over of the patient. Exercise, especially mountain climbing, massage, a sea voyage, and tonic medication are usually beneficial. Of course all depressing factors, all focal infections must be removed.

I may end by saying that there is no absolute standard for blood pressure by which one can predict what will happen to patients in the natural course of events. In many individuals high blood pressure serves them better than a normal blood pressure, but on the whole a low blood pressure, low for the individual's weight and age, gives a better prognosis as regards the endurance of the heart and the resistance of the blood vessels than a high blood pressure, although cerebral accidents can occur with either.

Finally, be it remembered, the human body possesses enormous factors of safety that are not easily exhausted by pressure either far above or far below the normal.

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DISCUSSION

Dr. James E. Talley (Philadelphia, Pa.): Judging from the literature, we are becoming more sensible in our attitude toward blood pressure. Those of us who began practice twenty-five years ago were confronted with the same thing in regard to fractional variations in temperature. It is nonsensical for people to write articles telling that some particular remedy has lowered a hypertension ten points, when any one knows that if a patient hurries to the office, because late for an appointment, you are apt to find the pressure much higher than if the patient comes in early and rests a few minutes before examination. In patients with essential hypertension it is not uncommon to have a reading from thirty to fifty points lower under the latter circumstances. The variability of blood pressure, under different circumstances, has been insufficiently stressed during the past.

Now a word about essential hypertension and so-called arterial hypertension. In assessing arteriosclerosis we must take into consideration not only the radial but the brachial and other superficial arteries.

What shall we call a definite hypertension if we must decide at one sitting? A definite working rule might be that when a patient in the early decades, in a recumbent position, shows a sustained pressure of 160 or above, it should be called hypertension. In the later decades 180 or above, under the same circumstances, should definitely be called hypertension. If the pressure is taken only once, with the patient in an upright position, its value will not be the same as if taken several times and an average struck.

As pointed out by Janeway, if these patients with essential hypertension ultimately end in arterial hardening, there are three causes of death before them: one is cardiac, one the arteriosclerotic kidney and the other is apoplexy.

Now a word about coma and convulsion in these patients: Both from literature and our own experience a diagnosis of uremia is too often made. In many of these patients the real trouble is a small cerebral hemorrhage or arterial spasm. I am sure you can have intermittent claudication elsewhere than in the leg. I have a patient who has had Jacksonian epilepsy of the right arm for over a year. The eye-grounds are all right, and we finally found that she developed these attacks, at least sometimes, during paroxysmal auricular fibrillation.

A word of warning in treatment: I have seen nocturnal dyspnea of cardiovascular disease with hypertension confused with essential asthma. In such cases adrenalin was given by hypodermic. Now, since, in some of these cases with a preëxisting hypertension, adrenalin can temporarily raise the systolic pressure another eighty points, the treatment is certainly not a safe one to say the least. Vasodilators are better in these patients with nocturnal asthma, and also in claudication as well as angina.

With respect to the early morning headaches, of which Dr. Riesman has spoken, just a word: There seems to be no relation between the height of the pressure and the severity of the headache. Furthermore, the attacks are intermittent. Though probably due to intracranial pressure, and sometimes relieved by compensation, it is difficult to explain their vagaries. If any one here has not advised such a patient to keep a small thermos bottle of hot coffee at the bedside, for early morning use, he has neglected something which will add to the comfort of the patient as well as himself.

Many of these hypertension cases with symptoms are too engrossed with business or social activity. Many of them do not get enough sleep. There is no better treatment of hypertension than increased rest, and these patients are unfortunate if they curtail their sleeping hours. It has been estimated that the ordinary run of hospital patients will show during sleep twenty to thirty mm. less systolic pressure than when awake, while in the hypertension cases the pressure will be fifty or sixty mm. less during sleep. This is an argument for more sleep and more rest.

Dr. James P. O'Hare (Boston, Mass.): It is always a pleasure to read anything that Dr. Riesman writes and it is a pleasure to hear him talk. I have enjoyed very thoroughly what he has had to say this afternoon and I subscribe to practically everything he has offered to us. I do not wish to go into any discussion of the various methods of treatment. He has covered that only too thoroughly. There are, however, one or two points that may be emphasized. I wish to go Dr. Talley one better, and say that we should look not merely at the peripheral arteries in dealing with hypertension but that we should look much more particularly at the small arteries, the retinal arteries especially. We have found in a fairly large series of hypertension cases that about 80 per cent show very definite changes in the retinal arteries, changes not subject to the error of personal interpretation whims at all.

I was glad to hear what Dr. Riesman had to say about infections because we have just gone through a fairly large series of cases with reference to the rôle of infection in hypertension. We have also taken a similar series of hospital cases without hypertension, with these same infections in mind. We find that the incidence of infection in hypertension is no greater than in the general run of hospital cases. There is one curious difference which was brought out by Dr. Thayer some years ago and by Dr. Barach recently, to which we subscribe, namely, that typhoid fever is more common in our cases of hypertension than in the usual run of hospital cases.

One cannot be too conservative in his appreciation of the effects of any therapeutic maneuver. I do not care what it is, one must interpret his findings very carefully. When we take the blood pressure three times, as we ordinarily do take it, the systolic may fall thirty points and the diastolic perhaps ten in two to three minutes. When it will rise from 168 to 242 and fall back again to 148, in forty-eight hours, during which time there is a corresponding though less marked change in the diastolic pressure, one can appreciate the variability of blood pressure, as was brought out by Dr. Talley, and can understand how easy it is to misinterpret the effect of therapy. There is no royal road to the treatment of hypertension, no one road that is sufficient, and I do not believe we should expect any one treatment to be effective. If we bear in mind one thing, that most of our cases (I think I am correct in saying "most of our cases") of vascular hypertension that apparently develop after forty really date back to before birth—if we appreciate that fact, I think we will be extremely conservative in interpreting the results of our therapy.

Dr. Joseph Sailer (Philadelphia, Pa.): I should like to ask a question and make a statement. I should like to know in just what position Dr. Riesman places the hypertension of aortic insufficiency—whether as a real hypertension or a mechanical defect.

I should like to say that in addition to the examination of the retinal arteries I have found some advantage in examining the arteries of the sclera by a method which was described by Dr. Harlow Brooks several years ago. It is sometimes difficult to examine the retinal vessels, but it is very easy to take a high-power lens and examine the sclera. The vessels show very distinctly.

I think Nellis Foster gave us the best idea of the value of diet in these hypertension cases that I have seen. That is, that when the amount of salt is diminished (this may be nothing more than forbidding the patient to take salt at the table) the appetite for protein food also diminishes, and it may be that the reduction of food as the result of salt diminution is valuable to the patient without worrying him particularly as to just what he is taking.

An interesting complication I have seen is the intramuscular hemorrhage. It usually occurs in the limbs. As a rule there is a sharp pain, followed in the course of twenty-four hours by an effusion beneath the skin. It usually worries the patient but I have never seen anything more that seems of significance than the discomfort and pain of the hemorrhage, so it is important to be able to reassure the patient that in spite of the pain and the bruise nothing has really happened in the case.

I think the paper was very illuminating and I have derived a great deal of benefit from it.

Dr. Riesman (in closing): What Dr. Talley says about coma, monoplegia and temporary aphasia is quite correct. No doubt very often these conditions, though ascribed to uremia are due to spasm of the vessels or localized edema. Such transient paralyses are rarely due to hemorrhage. Many of them get well with startling suddenness. I once was examining a woman who was completely paralyzed on one side. While I was testing her sensation with a pin she said, "Oh, Doctor, I can move my toe; I can move my foot," and when I had finished she was able to move the previously paralyzed limbs.

Spasm of the vessels may occur in a number of places in the same patient. Thus I once had under observation a man who had angina pectoris, intermittent claudication of the lower extremities, and sharp abdominal pains—so-called abdominal crises. One day he was seized with dimness of vision, and examination made by Dr. de Schweinitz showed a quadrant anopsia, that is one-fourth of the visional field was cut out, apparently by a vascular spasm far back in the cuneus.

Dr. O'Hare has properly emphasized the importance of examining the small arteries in suspected cases of arteriosclerosis. It would certainly be advantageous if the ophthalmologist and the internist would work a little more together in cases of hypertension.

It is no doubt important to search out the history for previous infection such as typhoid fever or influenza, which is perhaps the starting point of an arterial disease manifesting itself many years later.

Dr. Sailer has asked a very puzzling question with regard to aortic insufficiency. I am sure he knows the answer as well as I do, or it may be more correct to say that neither of us knows precisely how to answer it. I have seen the systolic pressure in cases of aortic insufficiency 310 with a diastolic pressure of 0.

The point that Dr. Sailer makes about vessels of the sclera is important and well worth remembering. I may say that in women it is not common to find the temporal arteries as tortuous as in men. Age thus shows both earlier and more clearly in men than in women.

THE PATHOLOGY OF THE PANCREAS IN DIABETES*†

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The purpose of this presentation is to review the findings concerning the pancreas in diabetes from the pathological standpoint.

It would be well to emphasize that in this paper, by diabetes we mean a glycosuria associated with hyperglycemia of pancreatic origin. Realizing the tremendous stimulus which insulin has given to workers all over the world, the bulk of the papers presented since this discovery have dealt first directly with the clinical application of this preparation; and secondly, with the physiological properties. Newer explanations are just beginning to appear and finally, possibly a newer conception of the pathology may be worked out.

In 1788 Cawley reported atrophy and stone in the pancreas in a case of diabetes. The pancreas was studied from time to time but not until 1889 was it definitely associated with diabetes, when von Mering and Minkowski[1] showed by complete pancreatectomy that a severe diabetes invariably resulted. This applies not only to dogs,[2] but to cats, rabbits, pigs, tortoises, frogs, eels and other animals.

Following Minkowski's work it has been definitely established that the extirpation of no other organ in the body has any similar effect and no toxic substance derived from the body of a diabetic man or animal has ever been found which is capable of causing diabetes in a second animal. Wells[3] states that "these facts lead to the conclusion (reached by Minkowski) that pancreatic tissue provides 'a something' separate from the pancreatic juice (internal secretion of the pancreas), the lack of which is responsible for the symptoms of diabetes." It would seem that "that something" is represented in insulin and that the disease diabetes is truly a metabolic disease while the pancreas is solely the exciting factor when it fails to supply the necessary "enzyme or activator" for sugar metabolism.

It is the opinion of many writers that the pancreas in all cases of human diabetes does not show any definite cellular arrangement which might be called specific as is the case with tuberculosis or syphilis. On the other hand, Laguesse[4] in 1893 was the first to adopt the view that an internal secretion is elaborated by the cells of the islands of Langerhans, the islands possessing an endocrinal function which is of importance in the metabolism of the carbohydrates, while the external digestive secretion is supplied by the acini. This was later forcibly pointed out by Opie,[5] who concluded that the islands of Langerhans elaborate the antidiabetic enzyme.. According to Weichselbaum,[6] Opie and others, certain forms of degeneration of island tissue constitute a characteristic lesion of diabetes.

For some time the independence of the islet tissue and the acini and ducts was a much discussed point with many opposing views. In 1886 Lewaschew[7] held that the acinal cells became converted into islet tissue and were capable of reforming after rest. While Laguesse (1893) maintained a similar "balancement" between the tissues he assigned a specific and independent function to them.

Karakaschiff (1904) found in a study on diabetes that the islets were without function except to form acini. Following the work of Mering and Minkowski it was definitely shown, Ssobolew (1902) and others, that while ligation of the ducts produced a loss of acinal tissue, the islets were not destroyed and diabetes did not occur.

In one type of experiment, according to MacCallum,[8] "half the pancreas was thus ligated and the animal survived perfectly well. After a year the animal showed the complete reduction of the ligated part to a thin, transparent film in the mesentery; extirpation of the remaining intact half of the pancreas was followed in such an experiment by transient glycosuria but after one day of this the animal showed no symptoms whatever and could assimilate large amounts of glucose or starch. After a month the transparent film which represented the other half of the pancreas was extirpated and the animal was thus plunged into the severest type of diabetes. This film contained only islands of Langerhans as was proved by the special stains of Bensley in the case of the guinea pig."

In 1907 Lane[9] showed that there were two kinds of granules in the islet cells, differing chemically from each other and from the zymogen of the acini. In 1911 Bensley,[10] by refined methods of fixation and granule stains, definitely demonstrated the difference between the structure of the A & B cells of the islets, the islets and acini, as well as the ducts and centro-acinar cells, with which they are likely to be confused. While these methods can be carried out very nicely on animals where fixation is made immediately after death it is very difficult in the case of the human where the autopsy may be delayed for more than one hour.

Still later in 1912 Homans,[11] using the methods of Bensley, concluded that the islets of

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Langerhans contain specific granules that allow of their positive identification, that under secretin there is no evidence that acini are converted into islet tissue, that when a part of the pancreas is left there is no evidence that islets are converted to acini, and that under stimulation the islet cells may lose their presumably stored up granules and appear as duct cells but there is no evidence that the ducts produce new islet cells.

Still later the same author[12] further suggests that the removal of three-quarters of the pancreas of the cat, leaving the main duct in situ, usually leads to a disappearance of secretory granules in the islet cells with suggestive evidence of overactivity and without the production of diabetes. The same procedure may occasionally produce a degeneration, hydropic in nature, accompanied by fatal diabetes. This may be identical with the hydropic degeneration described by Weichselbaum in fifty per cent of his autopsies in human diabetes and appears to be a result of overwork on the part of the islands of Langerhans.

Furthermore the changes in the islets in experimental diabetes take place only in the B cells of Lane and Bensley and have never been noted in the A cells.[13] These and many other experimental procedures have pretty definitely led to the conclusion that the islets and the acini are independent bodies and that while complete extirpation of the pancreas produces clinical diabetes, ligation of the ducts cutting off the external secretions to the duodenum produces no glycosuria and must allow a something in the nature of an internal secretion to be continued into the blood.

Thus far we have seen that the pancreas is necessary to life and to the utilization of dextrose, that the pancreas contributes an internal secretion necessary to the utilization of dextrose and that the islets of Langerhans supply that internal secretion.

The work on the pancreas in human diabetes is not as clear cut or concise as has been the experimental side. This is due in part to the difficulties of the study and in part to the fact that autopsies on diabetics are probably more often performed before the termination of the full development of the disease due to intercurrent infections.

Opie[14] has summed up the findings and has called attention especially to a hyalin degeneration in the islets cells in a large number of cases, the exact nature of which is not clear. This hyalin is the result of protoplasmic cellular change and is not of connective tissue origin. It is responsible, nevertheless, as in the case of hydropic degeneration of the experimental animals, for the loss of function in a large part of each islet and in a large percentage of the total number of islets.

In the study of both the gross and minute changes in autopsy specimens of the pancreas from cases other than diabetes, many different pictures are encountered. These are principally the loss of structure, true atrophy with fatty replacement, calcification, passive congestion, arteriosclerotic changes with perivascular fibrosis, periductal fibrosis, interlobular, intralobular, interacinal and intra-acinal fibrosis with hyalinization and lymphocytosis and variations in size and number of cells of the islands of Langerhans. The island changes in nondiabetics are not as marked or striking as in the diabetics. In addition to these the pancreas is the seat of acute inflammations, specific inflammations, tuberculosis and syphilis, congenital deficiencies with cysts and neoplasms.

The acinal tissue may show advanced lesions, sclerosis, lithiasis and carcinoma without involvement of the islands and no diabetes has resulted. Where the islands are involved in hyalinization and sclerosis, diabetes almost always has accompanied the lesion. On the other hand the islets are not found very often in diabetes solely the seat of change without some acinar involvement.

Opie[15] sums up the work of R. L. Cecil in a collected series of the study of the pancreas in ninety cases of diabetes mellitus, as follows:

Interacinar pancreatitis:	
With sclerosis of islands of Langerhans	39
With hyaline degeneration of islands of Langerhans	19
With sclerosis of the islands of Langerhans and lipomatosis	2
With hyaline degeneration of the islands of Langerhans and lipomatosis	1
With siderosis of islands of Langerhans (hemochromatosis)	2
Total	63
Interlobular pancreatitis:	
With sclerosis of islands of Langerhans	4
Total	4
Parenchyma normal; lesions of islands of Langerhans:	
Sclerosis of islands of Langerhans	4
Hyaline degeneration of islands of Langerhans	7
Infiltration of leucocytes about islands of Langerhans	1
Total	12
Pancreas normal in structure:	
Pancreas small and islands of Langerhans few	2
Islands of Langerhans few	3
No abnormality noted	6
Total	11

In seventy-nine cases, or 88 per cent, of the ninety cases of diabetes Cecil found lesions of the islands consisting of sclerosis, hyalin degeneration, acute inflammation, hemochromatosis with sclerosis. It must be remembered that the refined methods of fixation and granular staining of Lane and Bensley were presumably not carried out in this series, so that hydropic degeneration is not ruled out.

Many writers call attention to the abnormally small size of the pancreas which is present in cases of diabetes and presumably to the decrease in the number of islets. The normal pancreas weighs about 120 grams and in the diabetic this may be reduced to as low as 20 grams. In my own experience this is the most striking gross abnormality met with. Whether this may have been congenital or whether it is a part of a general atrophic change, whether it is secondary or primary to the diabetes may be still open to argument, nevertheless it is of common occurrence.

Hoehn in 1916,[16] working with me in the Laboratory of Pathology of the University of Pennsylvania, studied the autopsy records of twenty-one cases of human diabetes. He found a wide variation of changes and no predominating type. The acini and interacinal tissue were involved by a fibrosis the same as the interacinar pancreatitis of Cecil. These included patchy fibrous areas much like scar tissue, a uniform or irregular interacinous increase with interlobular and occasionally intra-acinous fibrosis.

The islands all showed changes but they varied as well as the acini. In some the cells were small and compact with pyknotic nuclei, in others the cells were swollen with vesicular nuclei. In one case a true proliferation of islet cells resembled a uniform hyperplasia diffusely scattered between the acini. In four of the cases hyalin degeneration or fusion of the protoplasm of the islets cells was marked. Vacuolization was present in some of the swollen cells, probably corresponding to the hydropic degeneration of Weichselbaum.

Conroy[17] studied twelve cases with serial blocks of tissue and showed a reduction of 50 per cent of insular tissue. In every case there were qualitative changes in the islands, hyalinization and fibrosis. These changes were not as noticeable in nondiabetic controls. Hydropic degeneration of islands was present in but one diabetic case and in none of the controls. Interacinous fibrosis was seen in both diabetics and controls but was more marked in the former. The conclusion was drawn that both quantitative and qualitative changes are operative in leading to a functional insufficiency of the insular tissue.

The relation of syphilis as an etiological factor in diabetes has commanded some attention. At first thought, due to the fibrogenic nature of the disease, this might seem to have an important rôle. Pinard[18] believes that syphilis has this important rôle in the etiology of diabetes. Twenty-three cases of diabetes had eleven with acquired and five with probably hereditary syphilis and he rates the syphilitic etiology at from eighty to ninety per cent. Labbe[19] thinks syphilitic diabetes extremely rare. He cites but one case in literature in which antisyphilitic treatment absolutely cured diabetes. In seven cases of syphilis in diabetes the results of treatment of the syphilitics was absolutely unfavorable to the diabetes. Smith[20] found but two cases of clear evidence of syphilis in a series of seventy-nine cases of diabetes.

In a study of the syphilitic serological reactions in one hundred and three cases of recent diabetes at the Geisinger Hospital, four (3.8 per cent) gave a clear-cut positive, and eight (7.7 per cent) a single positive, a total of twelve cases (11.6 per cent). Only one of these was a clear syphilitic clinically and three others were uncertain. In the one positive case antisyphilitic measures were carried on coincident with insulin therapy with very favorable results. In comparing our own percentage figures of the incidence of positive syphilitic serological reactions in routine hospital admissions in all cases we find one hundred and eighty-nine positive out of a series of fifteen hundred and thirty admissions, a percentage of 12.4. The percentage of the incidence of syphilis in diabetes would seem to be about on a level with our ordinary disease admissions but the relative number increased in diabetes is due we think to false positive reactions where the blood sugar is high. This has been borne out in two cases which had high blood sugars and positive reactions, and later, following a reduction of the blood sugars under treatment, had negative reactions. The incidence of diabetes among our known syphilitics is very low, and while we realize that atrophy, fibrosis and hyalinization are important pathological findings in syphilis we are of the opinion that syphilis plays only a very minor rôle as an etiological factor.

On the other hand we believe with Mason[21] that strongly positive syphilitic blood serological reactions in the absence of a history or definite lesions of syphilis should be considered conservatively, and again, when diabetes complicates a definite syphilitic there is no contraindication to active antisyphilitic treatment at the same time that antidiabetic measures, including insulin, are being maintained.

In a series of collected papers, recently published by Allen,[22] he reviews the subject extensively and offers much experimental data in confirmation of his views. He reaches the conclusion that the B cells are the sole producers of the internal secretion which is essential for carbohydrate metabolism; and when they are exhausted, in a state of hydropic degeneration, the animal is as completely unable to use carbohydrate as a totally depancreatized animal, notwithstanding the presence of large masses of acinar, centroacinar, duct and A cells.

The humoral stimulus to hydropic degeneration, according to the experiments of Allen, cannot be an excess of blood sugar, but must be something deeper or more specific in connection with diabetes. This is a matter of pure speculation at present and is a note on the possible etiology bringing about exhaustion changes in the pancreas.

By operating methods, a considerable reduction of the arterial supply to the pancreas and a moderate increase of the arterial circulation failed to alter the pancreatic structure in any way.

Allen notes that at autopsy on one thousand controlled dogs eight showed some form of pancreatitis other than island changes and were not diabetic. A large number of canine infections, such as distemper, pancreatic abscess, were also seen without diabetes.

Concerning the pathology of human diabetes, Allen believes that hydropic degeneration occurs sufficiently often, as demonstrated by proper fixation and staining methods, to make a correct diagnosis of diabetes in the great majority of severe cases. He believes that the original process is an acute conflagration in the pancreas which does all or nearly all of its damage and from then on, the disease settles down to a chronic course, but is not progressive as far as the further development of the pathology is concerned, except in the formation of scar tissue as a reparative process. He has reviewed a total of five hundred and seventy cases in which the pancreas was studied. Abnormalities were found in 48 per cent of the five hundred and forty-nine cases which were clinically nondiabetic, and in all of the cases which were clinically diabetic. He discusses the findings, which in a general way are the observations of other writers, with especial emphasis on hydropic degeneration.

In speaking of the relationship of infection to diabetes, as far back as 1890 Hirschfeld[23] was impressed with the possible relationship of bowel disorders and diabetes, and in 1905 he described three cases out of fourteen observed, of diabetes accompanied by symptoms interpreted as pancreatitis. The subject has been much discussed pro and con and each may hold his own view until some more definite proofs are put forth. I am of the opinion that generally we are much more often the subjects of long continued small dosage of bacterial infection, as a bacteriemia from some obscure focus of infection, then we are ever aware of at the present time.

The fact that insulin, a refined alcoholic extract of pancreatic tissue, supplies to the diabetic that "something" which helps him return to and maintain his carbohydrate metabolic balance would seem definitely to establish the experimental work on the pancreas which has gone before. The fact that definite dosage increased or decreased by units brings about this balance would seem to establish the fact that it belongs to products of internal secretion, and the experimental work which has gone before is again confirmed and the islets pretty definitely spotted as offending foci. In insulin the research worker has a great weapon probably almost sufficient to close the pathological end of this subject.

CONCLUSIONS

The pancreas had long been suspected as the source of trouble in diabetes and Mering and Minkowski in 1890 definitely established its relation as a whole by complete extirpation.

The subject now divides itself into the experimental side on animals which is a relatively acute form and the human side which is more chronic.

On the experimental side, point by point the histological differentiation between islets, acini and ducts has been accomplished. To the acini has been ascribed the function of supplying the external pancreatic secretion and to the islands of Langerhans the internal secretion.

The character of the islet involvement has been shown to be an exhaustion with degeneration in the nature of a loss of normal granules and the absorption of fluid termed a "hydropic" degeneration.

On the human side many changes in the pancreas have been noted of a fibrotic nature present in both diabetics and nondiabetics, but again the islands are more constantly involved in the diabetic cases.

The character of this involvement is fibrosis, atrophy, hydropic and hyalin degenerations.

Finally it now remains for insulin to clear up the entire subject which will probably be forthcoming in the near future.

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DISCUSSION

Dr. Henry D. Jump (Philadelphia, Pa.): It would be futile for me to attempt to add to this very thorough discussion of the pathology of the pancreas which Dr. Keilty has given us. It will, perhaps, be worth while to do as I am going to attempt to do—touch some of the important points of his paper as they have appealed to me and as they may or may not have appealed to you.

There is a certain uniformity in the pathology of diseases of the pancreas, no matter what the disease may be. The difference lies more particularly in the degree of the disturbance than in any difference in the pathology. This presupposes, more or less certainly, a common causative factor and according to various theories there are three probable routes of invasion: through the gall-ducts upward; through the duodenum upward; through the lymph channels, particularly those connected with the gall-bladder. Each has its exponents, and each of these believes that the other two sources are less likely than the one he believes in. It may be that the truth lies in all of them. The common factor has not been determined. The fundamental lesion is necrosis, developing before the hemorrhage, developing before the inflammatory condition. It may be that under the use of insulin and the preservation of the life of the diabetic we will be able to get rather more definite pathologic knowledge of pancreatic disturbances in the diabetic than we have in the past. His life will be preserved for a longer time, his island cells may be preserved to a greater extent but, according to our present knowledge, they will ultimately degenerate and he will die. The chances are that he will die of diabetes rather than of an intercurrent disease.

Extensive disease of the pancreas may exist without causing diabetes, due to the fact that we have within the pancreas two distinct functions: that of the secretion of a digestive juice for external use, and the internal secretion which comes from the islands of Langerhans. If the islands are not involved, diabetes will not occur. In the preponderance of the cases of diabetes there has been, as Dr. Keilty showed, a demonstrable lesion in the islands of Langerhans of about 88 per cent. It may be that later, with the greater knowledge which the use of insulin will give us, we may be able to find a higher percentage of lesions. I have always felt that the great majority of cases of diabetes have been of pancreatic origin.

An important condition in the islands, which is of clinical interest is the hydropic degeneration which occurs when the patient is over-fed. They have given up the fight and become hydropic because of the demand for their insulin, which they can't meet. With proper diet and the supply of sufficient insulin from the outside, the islands are relieved, and they have a chance to recover. The toleration which has come about by correct dieting is due to such recuperation. The use of insulin will facilitate this recuperation and in some cases they become capable of furnishing insulin enough. These cases then can do without that which we have given them, if the diet be controlled. Unfortunately, however, the islands have so degenerated in some that they will never recover and these must always be given insulin.

Dr. David Riesman (Philadelphia, Pa.): Dr. Keilty has made very clear to us the attitude of the pathologist toward the abundant literature on the relation between the pancreas and diabetes. There is no longer any doubt as to this relation. One point that I did not hear him mention was stone in the pancreas. I have seen one case of diabetes in which the autopsy showed the pancreas filled with calculi. In a few instances advanced lesions of the pancreas have been observed without diabetes. The explanation is perhaps to be found in the existence of an accessory pancreas, which should always be looked for.

Regarding syphilis, I agree with Dr. Keilty that it is not a factor in diabetes. Diabetic patients may have syphilis but notwithstanding the excellent work of Dr. Warthin, I do not believe that syphilis plays an important part in the production of diabetes. It does not compare with heredity as a factor of etiology. In diabetic children without diabetic antecedents, it is well to look into the question of previous infectious diseases, particularly mumps, jaundice, etc., in which the pancreas may have been involved.

Insulin is different from any other known internal secretion. It is probably a protein and cannot be duplicated synthetically at the present time. Neither in its physiologic action nor in its chemical composition can it be compared with adrenalin, pituitrin or thyroxin.

I am hopeful that implantation of the pancreas may sometime become a method of supplying insulin constantly to the body. Many years ago, before we knew insulin, I had made preparations to transplant an animal pancreas into a diabetic patient, but at the last moment the man got frightened and eloped from the hospital. The implantation of the whole pancreas would probably fail, as the islands would be destroyed by the secretion of the acinous cells, but if some method can be found by which pancreatic tissue containing only the islands can be grafted, then the problem will, I believe, be solved.

Dr. Keilty (in closing): I thank the gentlemen for their discussions. In order to present a paper of this type in a few minutes one must leave out a number of things. Several of the points brought up have been covered in the literature.

The question of calculus as an associated factor in diabetes was first mentioned by Cawley in 1788. There have since been numerous cases reported but it is not a constant finding due, no doubt, to the fact that the islets are not necessarily involved. The last point mentioned by Dr. Riesman, implantation, has been the subject of considerable research, but while it has offered possibilities, the final end results have not been conclusive.

I think that bacterial infections play a very important part in the etiology of many of these puzzling diseases, and I am sure we have, much more frequently than we suppose, these bacterial infections emptied into our systems from some obscure focus that could be responsible for the hydropic changes in the pancreas in diabetes.

MOVEMENT OF DIAPHRAGM WITH PATIENT IN LATERAL POSTURE

Tasker Howard, Brooklyn (*Journal A. M. A.*, April 19, 2924), points out that the peculiar action of the diaphragm in the lateral posture is responsible for the fact that: Breath sounds are louder over the down side. Râles are heard best on the down side. A lower lobe is most at rest when the patient lies on the opposite side.

RHEUMATIC HEART DISEASE IN CHILDREN UNDER TWO YEARS OF AGE

In three cases of carditis in children under 2 years of age, related by B. S. Denzer, New York (*Journal A. M. A.*, April 19, 1924), the rheumatic origin has been proved by finding either subcutaneous fibroid nodules or Aschoff bodies. Denzer believes that careful search for these may lead to the discovery of a greater number of cases of heart disease in infancy of rheumatic origin.

A SCARLET FEVER ANTITOXIN

George F. Dick and Gladys Henry Dick, Chicago (*Journal A. M. A.*, April 19, 1924), have shown that the streptococci which cause scarlet fever produce a toxin, and that this toxin, when injected into susceptible human beings, produces nausea, vomiting, general malaise, fever and a scarlatinal rash. Used in high dilutions, the toxin gives a skin test for susceptibility to scarlet fever. In more concentrated solutions, it can be used in preventive immunization. The blood serum of persons immunized with the toxin and of patients convalescent from scarlet fever contains an antitoxin that neutralizes the toxin. This has been determined by means of the skin test. A scarlet fever antitoxin has been obtained by immunizing a horse with scarlet fever toxin. This antitoxin may be concentrated by the methods employed for concentrating other antitoxic serums. The therapeutic value of the antitoxin can be determined only when the results of its use in a large series of carefully controlled cases are available.

FOUR GENERATIONS OF POLYMASTIA

George H. Klinkerfuss, St. Louis (*Journal A. M. A.*, April 19, 1924), found this anomaly in four generations of one family. In each case but one the left axillary region was the one involved. In the case of the mother of the patient swellings were noticed in both axillæ. The great-grandmother, the great-aunt, the grandmother and the mother of the patient gave a definite history of polymastia. Klinkerfuss urges that these tumors of the axilla, enlarging in pregnancy and keeping pace with the rapid enlargement and engorgement of the breasts in the early puerperium, should be classed as polymastia. Apparently the masses without nipples have some connection with the normal breasts, possibly by an elongated duct. These accumulations of breast tissue should not be confused with inflammatory processes; and the patient should be assured that they have nothing in common with carcinoma of the breast.

PARALYSIS OF LEFT RECURRENT LARYNGEAL NERVE

Mitral stenosis in rare instances may cause paralysis of the left recurrent laryngeal nerve. One such case is cited by George E. Price, Spokane, Wash. (*Journal A. M. A.*, April 19, 1924). The probable cause of this paralysis is pressure, the nerve being squeezed between the left pulmonary artery and aorta or aortic ligament. The paralysis may occur at any time during the course of a mitral stenosis, either as the first symptom noticeable to the patient, or abruptly during a break in cardiac compensation. Prognosis depends on the duration and severity of the pressure, and ability on the part of the heart to respond to appropriate treatment for the valve lesion.

BILIRUBIN DETERMINATION IN CHOLECYSTITIS WITHOUT JAUNDICE

The report made by J. C. Friedman and David C. Straus, Chicago (*Journal A. M. A.*, April 19, 1924), is based on a study of twenty-nine cases of cholecystitis, either proved by operation or in which the diagnosis seemed beyond question. Twenty-two of the cases, or 62 per cent of the twenty-nine, were proved by operation; the other seven cases, or 38 per cent, presented what seemed to be unassailable clinical and roentgenologic evidence. The authors employed two laboratory tests for hyperbilirubinemia, the Van den Bergh and the Fouchet, in order to determine whether the Fouchet method could not be used instead of the more complicated Van den Bergh method. The Fouchet test was positive twenty-eight times; negative, nine times and doubtful once. One or the other, or both direct and indirect Van den Bergh tests, were positive twenty times, negative fifteen times, and doubtful three times. In other words, the Fouchet test was positive in 74 per cent, whereas the Van den Bergh was positive in only 53 per cent, i. e., 21 per cent less often. It seems probable that, if examined during the attack, more than 90 per cent of cases of cholecystitis without evident jaundice show hyperbilirubinemia. Hyperbilirubinemia was found in 83 per cent of cholecystitis cases, being present in 93 per cent of cases during the attack, and 73 per cent of cases during the interval, the latter being defined as the condition when gastric symptoms are present but not pain. The Fouchet test is recommended for clinical purposes as being simpler and less sensitive than the Van den Bergh test, reacting only when the blood serum contains a pathologic amount of bilirubin. The presence of hyperbilirubinemia is of value in deciding between cholecystitis and gastric and duodenal ulcer or carcinoma. Its presence is of no value in differentiating from pneumonia. Here latent jaundice was found in 50 per cent of the nonicteric patients examined.

SELECTIONS

OBESITY AND ITS TREATMENT*

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Obesity is a metabolic disorder characterized by an abnormal and harmful accumulation of bodily fat. Two leading pathologic varieties are distinguished, to wit, the plethoric and the anemic. Many intervening or transitional types, however, are encountered. The plethoric variety may be looked upon as a condition of hypernutrition. There is a terminal stage of hydremia into which both varieties tend to merge; this, be it remembered, occurs more commonly in the anemic than in the plethoric type.

The causes of obesity are various, although in practically all cases the individual becomes corpulent either by ingesting an excessive amount of food, especially fat-producing dishes (the usual cause), or as the result of insufficient physical exercise, or by a combination of these factors. In this connection, it should be well understood that the energy derived from food is reckoned by calories of heat produced during the combustion of the latter. Thus, one gram of protein or carbohydrate liberates 4.1 calories, while one gram of fat liberates about 9 calories, of heat. An intimate relationship between the temperament of an individual and obesity is easily observed. For example, a nervous, restless individual will expend far more energy in carrying on a certain, definite work than a tranquil, inactive person. It is probably safe to assume that the ductless glands rarely play an etiologic rôle in this affection. Grafe,[1] however, believes that the thyroid not only controls the oxidations, but also the intracellular metabolism.

Among the predisposing causes are heredity, gout, age, sex, occupation and enforced rest. I desire to emphasize the fact that disturbance of the metabolic processes is frequently an inheritance from ancestors, the contrary opinion of certain recent writers, notwithstanding. In the female, corpulency is frequently met with about the time of the menopause. As bearing upon the effect of enforced rest, my notes indicate the interesting fact that out of a total of 543 cases, 7.9% followed an acute illness.

It is worthy of comment that the anemic variety of corpulency occurs more often in the female, and the plethoric in the male sex. The anemic form is characterized by, and most probably dependent on, anemia, often of the chlorotic type. We have in this variety an association of a marked increase of fat depositions in the usual regions of predilection, hence the diagnosis is free from difficulty, although it should be verified by a blood examination. We must recollect, however, that other factors may be operative in the production of this form of obesity, namely, feeble oxidation resulting from a reduced hemoglobin content of the erythrocytes, and habitual muscular inactivity, often with insufficient nourishment.

On the other hand, the plethoric form manifests the evidences of hypernutrition of all the tissues of the body. In typical cases, the blood shows an abnormal richness both in erythrocytes and hemoglobin. The fat deposits are apt to be symmetrically distributed throughout the body, and the patient is usually vigorous. The physical signs in both plethoric and anemic obesity accord with the general condition in these types.

My notes show that the blood pressure is somewhat above normal figures in cases of obesity, and also that the incidence of heart disease, both organic and functional, is abnormally high among sufferers from this condition. Preble,[2] who made observations on 1,000 cases, found 432 showed evidence of organic, and 230 of functional heart disease. His observations also showed evidence of kidney impairment in 463 of the 1,000 cases, while chronic nephritis was diagnosed in 53 cases, and albuminuria without nephritis in 410. It has been well established by the published results of experiments by Means,[3] Preble, Lahey and others, that the deviation from the normal standard of basal metabolism is about equal as between plus and minus.

In not a few cases the fat-depositions are local rather than general, e. g., they may be confined to the mammary regions, abdominal walls or hips. It is probable that, as Williams has pointed out, the circumscribed forms of obesity are caused by lack of exercise of the underlying muscles.

Before proceeding to the subject of the treatment, it seems to me that the question of the detection of associated conditions, as gout, arteriosclerosis, decompensation and the like, should be carefully noted when present. Again, hypophyseal obesity, adiposogenital distrophy, myxedema, and Dercum's disease, which do not concern us at present writing, should nevertheless not be confused with simple obesity, for the sake of appropriate treatment.

TREATMENT

In connection with the subject of the treatment of obesity, certain prophylactic agencies should be briefly considered. In persons who have inherited a disposition to corpulency, the restriction of the fat-forming edibles should be commenced at an early period of life. Again, carefully regulated and systematic physical exercise should be advised and encouraged. I have found cool bathing useful as a prophylactic measure if carried out daily. Persons who have inherited a predisposition to gout, demand special prophylactic measures, more particularly as they approach the middle period of life.

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* Read before the Philadelphia County Medical Society.

In approaching the treatment of confirmed obesity, an attempt should be made to group the cases, both from a pathologic and etiologic standpoint. For example, those that are more or less typical of the anemic variety present indications differing widely from those belonging to the plethoric form of the disease. In like manner, the special etiologic factors operative in a given case will demand attention, and should if possible, be overcome or removed before any other elements of the treatment are considered. I know of no other condition in which the individual case requires more careful study from the pathologic and etiologic viewpoints than obesity; and the failure to make such observations is the principal cause of failure in its management.

In general, the treatment may be conveniently discussed under three heads: (a) the dietetic treatment; (b) the mechanical management (to increase oxidation); (c) the medicinal measures.

(a) DIETETIC TREATMENT

In dealing with the plethoric variety, certain general dietetic rules are to be carefully observed. It will be found that as a rule, the ingestion of an excess of fat-making food is the principal cause, hence the carbohydrates and fats should be considerably restricted, although not totally withdrawn. I feel convinced that by pursuing this course the fat depositions are consumed without disturbing the normal metabolic processes to an appreciable degree. On the other hand, I have seen marked gouty and rheumatic conditions develop as the result of a heavy protein diet, in these cases.

The well-known work of Chittenden[4] on the low protein dietary has recently been called into question. For example, McCollum has succeeded in raising rats on diets containing as high as 70% of protein, and this is held to be a strong argument against ascribing to protein deleterious physiologic effects when fed even in great excess. Mitchell[5] pertinently states that while it is probably true that protein may be indulged in to great excess without any immediate ill effects, or even with no ill effects at all, the wisdom of so doing may be questioned. My own observation is to the effect that mental and physical efficiency are best maintained in cases of obesity under treatment, by a normal, or slightly increased, proportion of protein in the dietary, or about 120 grams daily at moderate work.

My custom, therefore, has been to allow a normal or slightly plus standard of protein in this form of obesity, based on the daily habits as regards work and exercise of the individual patient, but to restrict the carbohydrates and fats to about one half of the amount previously taken. The patient should be encouraged to use ordinary bread, cream and sweets sparingly, and to take instead such articles as potatoes, fruits either raw or stewed, and the green vegetables, which have a lower fat-forming content. It is to be recollected that there is no diet applicable to all cases of obesity. On the other hand, each patient must be carefully studied—in other words, individualized. In many cases of the plethoric form, however, the following diet may be recommended: protein, 120 gm. (3.84 oz.); fat, 45 gm. (1.4 oz.); and carbohydrates, 140 gm. (4.3 oz.).

It is well to allow only a small amount of fluid with meals, but not less than eight ounces may be taken on rising and three hours after each meal. The total for each day should be somewhat less than a liter and a half. In cases of anemic or hydremic obesity, the restriction of fluids may be more rigidly enforced, the object being to favor concentration of the blood. This is accomplished by not allowing more than thirty-two ounces of fluid per day. As Perry[6] has well said, cases occur in which an excessive amount of serum in the tissues is practically the sole cause of the corpulency, and recommends that the percentage of water in different forms of food employed should be carefully estimated.

It should be pointed out here that in this type of the disease, highly nutritious, blood-making food (minimizing sweets, fats and carbohydrates of high carbohydrate content) is indicated. Finally, in extreme cases of obesity, the patient should be put to bed for a couple of weeks and his caloric intake carefully regulated and weighed, preferably by a nurse. The medical profession is doubtless well acquainted with the principal systems of diet known by the names of Banting, Ebstein and Oertel, so that I shall not consider them in detail here, except that I should like to state that they are all open to objections when used as guides to be routinely followed.

The coöperation of the patient with the physician is indispensably necessary to success in the dietetic treatment of obesity. I have found that just emphasis upon the seriousness of the condition, especially in middle and advanced life, served to gain this coöperation.

(b) THE MECHANICAL MANAGEMENT

(To increase oxidation)

Another important indication to be met is to promote oxidation through exercise. A mistake, however, is often made at the commencement of treatment by not limiting the exercise, thus overtaxing the heart. It is advisable in well-marked cases to take little exercise until the fat deposits have in a measure at least, been removed. When exercise in sufficient amount can be taken, it should be in the majority of the cases, at least, in the form of walking or horse-back riding in the open, preferably directly after the morning and noon meals. The special form of exercise, however, should be carefully adjudged for the individual patient. Golfers and tennis players should be encouraged to pursue their favorite games in a systematic manner. Physical exercise promotes the destruction of the fat warehoused in the system and it also invigorates cardiac action.

In cases in which the circulation is beginning to fail, or is decidedly impeded, the exercises should be carefully graduated. I have found some of these patients to do exceedingly well under the plan advocated by Oertel; namely, by specifying a short distance at the outset, to be undertaken daily, and then gradually increased. That part of the Oertel method which has reference to the degree of inclination, however, cannot always be successfully carried out at home. In a small percentage of cases, cardiac dilatation is present, with or without murmurs; in these, the so-called "resistance exercises" employed by Schott in the treatment of cardiac disease, may be carried out with excellent effect. When oxidation cannot be sufficiently promoted by muscular exercise, recourse to deep massage is the best known supplementary agency.

In the absence of contra-indications, cold or salt water baths, followed by active hand rubbing by the patient (beginning at the feet), should be advised and encouraged. In some cases, a sweat in an electric-light cabinet followed by a cold shower, at intervals of two or three days, gives excellent results. Gradually, cool baths are to be employed in lieu of cold baths among feeble or highly susceptible individuals. In the gouty or rheumatic subjects, it is often found necessary to advise warm baths with a view to increasing cutaneous elimination, rather than the usual cold ablutions.

(c) THE MEDICINAL MEASURES

Thyroid feeding, which formerly enjoyed considerable favor with the medical profession, is now rarely resorted to except in cases of anemic, flabby, or what I have termed the "myxedematoid" variety of the disorder, and in those instances of adiposity among females in whom menstruation is scanty and irregular. Unfortunately, when cases respond to this remedy, which acts by increasing the metabolic rate, the loss of weight is not maintained after a reduction of from ten to fifteen pounds, as a rule, when its further use should be discontinued. When a reduction of the dietetic requirement to 50% or even lower, with a maximum of 1,500 c.c. of fluids, fails, Grafe,[7] who has had much experience in the management of cases of obesity, supplements this measure with endocrine therapy. In all cases in which symptoms of thyroidism, such as tachycardia, restlessness, and the like develop, the remedy should be at once withdrawn. Ovarian preparations have been recommended in climacteric obesity.

In the anemic variety, iron and arsenic should also be employed and their use controlled by blood examinations at regular intervals. Cardiac dilatation or incompetence calls for the use of digitalis or other cardiants. Saline laxatives carried to the point of slight catharsis, more particularly in the plethoric variety, often serve a useful purpose.

There are a number of spas which enjoy more or less reputation in the treatment of this condition, although as a rule, better results are obtainable at home. It is further to be recollected that the favorable results obtained at watering-places, are rarely permanent. As stated elsewhere, in mild cases of plethoric obesity, such places as Hamburg, Kissingen, Brides-les-Bains, and Vichy, abroad, and Saratoga and Virginia Hot Springs, at home, may be recommended. Finally, it is to be recollected that medicinal treatment is neither satisfactory nor successful as a rule and that at spas, main reliance is placed upon a suitable regimen of diet and exercise.

Certain physicians have found the application of electricity to give satisfactory results, but I have not had any experience with its use in the treatment of this condition. The hypertension, which is often met with in these cases of obesity may be due to the fat deposits, and if so, will disappear with the removal of the latter. If not, then an associated nephritis is likely to be the important factor in its production. R. H.

Rose[8] claims remarkable effects on high blood pressure from weight reduction. G. Rosenfeld[9] has stressed the favorable effect on an associated nephritis of treatment of obesity.

There are other recognized complications, some of which are precursors of the terminal stage, and call for appropriate, special remedial measures. Among these are,—bronchitis, pulmonary congestion, anginoid attacks, albuminuria, glycosuria, edema, and the like, but they cannot be discussed on this occasion for want of time.

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A RAPIDLY FATAL CASE OF CEREBRO-SPINAL MENINGITIS

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On November 22, 1923, at 9 a. m., I was called to see the patient, a school boy, age 16. He was unconscious, cyanosed and frothing at the mouth. He had Cheyne-Stokes' respirations, and there were convulsive movements of both arms, particularly of the left hand, the fingers being tightly clenched. The axillary temperature was 104° F., pulse 112. The systolic blood pressure was 200 mm. of Hg., diastolic unobtainable.

The history of the onset of the illness was hard to obtain from the family. There was no history of injury to head, or any evidence that poison had been taken in food or liquid. The boy had been in school the previous afternoon, had played basket ball after school, and in the evening had spent some time at a basket ball game. At 9 p. m. he returned home, complaining of a headache and vomiting. He went to bed and when next seen by his father, at 8:30 a. m., was unconscious. Patient was removed to the Reading Hospital, and died at 10:15 a. m., November 23, 1923, 12 hours after complaining of feeling ill.

Consent for an autopsy was given, and with the aid of laboratory findings a diagnosis was established. Following the autopsy, a statement from the father that the boy had complained of slight earache five days before his death was obtained.

Patient had diphtheria at the age of 4. His family history had no bearing on illness causing death.

LABORATORY FINDINGS AND AUTOPSY REPORT

By Dr. E. D. Funk

URINALYSIS (Catherized Specimen)

Chemical	*Microscopical*
Reaction, Slightly Alkaline	No Crystals
Albumin, Trace	Few Epithelial Cells
Sugar, Positive—3.6%	Few W. B. C.—2-4 per field
Diacetic Acid, Negative	Few R. B. C.
Acetone, Negative	Occasional Cylindroid.
Blood, None	No Renal Casts Seen.
Bile, None	
Pus, None	
Indican, Normal	
Specific Gravity, 1.014	
Color, Amber—Clear	

SPINAL FLUID

Transparency	Turbid
Reaction	Alkaline
Color	Milky
Sugar	Negative
Albumin	Increased
Globulin	Increased
Pressure	Increased 32 mm. of Hg.
Cells	825 per c.mm.
Wassermann	Negative

BLOOD CHEMISTRY

Urea Nitrogen	32	Milligrams per 100 c.c.
Blood Sugar	266	“ “ “ “
Nonprotein	75	“ “ “ “
Creatinin	1.5	“ “ “ “
Blood Wassermann	Negative	

AUTOPSY

History No. 45,173. Laboratory No. 9,992. Tissue Number 436.

Patient, J. S. Physician, Dr. H. U. Miller. Specimen, Autopsy. Clinical Diagnosis, Uremia.

Macroscopical Examination: The body is that of a boy approximately 17 years of age, who is well developed and well nourished. The body is warm and rigor mortis is absent. There is extreme cyanosis of the head, face, neck and upper chest. The pupils are equal and slightly dilated. A small amount of frothy material escapes from the nares. There are no evidences of injury either recent or old. There is no evidence of any edema of the lower extremities.

Peritoneum: The peritoneal cavity contains a few c.c. of a clear, straw-colored fluid, and the serous lining is smooth and glistening.

Diaphragm on the left side is at the level of the upper border of the fifth rib in the midclavicular line and on the right side at the fourth interspace at the same level.

The Liver just reaches the costal margin in the midclavicular line, and extends beyond the ensiform cartilage to the distance of 1.5 cm.

The Appendix measures 8 cms. in length, and is apparently normal. The relation of the intra-abdominal organs is apparently normal.

The Small Intestines are freely movable, and are practically empty.

The Large Bowel contains a small amount of fecal matter, but otherwise shows nothing of note.

Left Pleural Cavity shows some adhesions about the apex and upper lobe, and over the diaphragmatic surface. These are old adhesions, and are broken up with some difficulty. The cavity is practically empty.

The Left Lung measures 18x12 cms. and weighs 340 grams. The organ crepitates throughout, but shows some elasticity in its lower lobe. A number of circumscribed areas may be seen over the pleural surface which are slightly raised and are somewhat darker in color than the surrounding lung tissues. The entire lung shows a small amount of pigmentation. Upon section, the organ is considerably edemetous with congestion of the lower lobe. This congestion is but slight, and appears spotty in character. Portions of lung excised, are found to float upon the surface. The bronchi contain a very small amount of thin mucus. The right pleural cavity is free from adhesions, and contains a small amount of blood-tinged fluid.

The Right Lung measures 20x13cms. and weighs 310 grams. The organ is comparatively free of pigment, and somewhat emphysematous in the upper and middle lobe, and on section shows changes similar to those found in the opposite organ.

The Pericardium is free from adhesions and contains a normal amount of yellowish serum.

The Heart measures 14x9 cms. and weighs 290 grams. The heart is about normal in size and shows a slight hypertrophy of the left ventricle, a condition not uncommonly found in young athletic individuals. The myocardium is of a dark red color, quite firm, and shows no gross pathological changes. The endocardium and valves show no changes. The aorta shows an occasional small yellowish plaque. The foramen ovale is closed.

The Spleen measures 14x9x12 cms. and weighs 200 grams. The capsule is smooth and tight. On section, the cut surface is smooth, somewhat congested and shows an unusual prominence of the malpighian portion.

The Adrenals show no gross change.

The Left Kidney measures 11x6x4 cms. and weighs 130 grams. The capsule is smooth, and strips readily, leaving a smooth regular surface. The incised cortex is slightly swollen and congested. There is no evidence of any acute inflammatory process. The ureter is single and patulous.

The Right Kidney measures 11x6x3.5 cms. and weighs 140 grams. It in general resembles its fellow. The ureter is single and patulous.

The Bladder is considerably distended, being filled with a clear, amber-colored urine, approximately 10 ounces. The mucous surface shows no gross change.

The Liver measures 25x19x11 cms. and weighs 1,720 grams. The liver is somewhat darker in color than normal. The capsule is smooth and free from adhesions. On section, the cut surfaces exude a large amount of a dark red blood. The sinuses are engorged, being filled with blood.

The Gall Bladder reaches to the margin of the liver and is partly filled with a greenish-yellow bile. The mucosa shows nothing of note. The biliary passages are patulous.

The Stomach is contracted, especially along the cardiac end, and contains a black, granular material which has no unusual odor. The mucous membrane is thrown into folds, but shows no evidence of inflammation.

The Intestines are apparently normal. The mesentery shows some enlargement of the lymph nodes, and also several large areas which are quite firm and on section present calcareo-casious lymph nodes.

The Pancreas measures 18 cms. in length and weighs 150 grams. It shows nothing unusual.

The Brain weighs 1,130 grams. There is some edema of the meninges and along the sulci, over the vertex, is found a yellowish exudate with engorgement of the vessels. The base shows no evidence of exudate except some engorgement of the vessels. An examination of the spinal fluid reveals a marked turbidity with an increase in cell count, but no bacteria were found. An examination of the mastoid and petrous portion of the right temporal bone reveals a mucoid material within the middle ear and mastoid antrum. An examination of the material reveals a large number of polynuclear cells, with diplococci whose morphology strongly resembles that of a pneumococcus. Both spinal fluid and blood were taken for a Wassermann serum test.

Anatomical Diagnosis: Chronic adhesive pleuritis of right side. Pulmonary edema and congestion of liver, spleen and kidneys. Calcareo-caseous tuberculosis of the mesentery. Suppurative cerebrospinal meningitis. Suppurative otitis media and mastoiditis of right side.

Bacteriological Examination: Cultures of the cerebrospinal fluid, cerebral exudate and right mastoid gave all the cultural characteristics corresponding to that of the pneumococcus.

Microscopical Diagnosis: Congestion and edema of lungs. Cloudy swelling of heart, liver and kidneys. Congestion of spleen, kidneys and liver. Acute suppurative leptomeningitis.

LABORATORY REAGENTS

GEORGE R. MOFFITT

HARRISBURG, PA.

The following list of reagents may be found useful to practicing physicians in equipping office laboratories for carrying on the simpler forms of microscopic and chemical investigations:

Analysis of Urine:

Albumin—qualitative—Acetic acid 33%, or concentrated nitric acid C. P.

Albumin—quantitative—Eabach's reagent: Picric acid 5 gm., citric acid 10 gm., water 500 c.c.; or (Purdy's test) potassium ferrocyanide 10% solution and 50% acetic acid.

Sugar: Fehling's copper solution: Copper sulphate 3.465 gm., water to 100 c.c.

Fehling's alkaline solution: Rochelle salt 17.3 gm., sodium hydroxide 12.5 gm., water to 100 c.c.

Or Benedict's solution: Copper sulphate 17.3, sodium citrate 173. gm., sodium carbonate 200. gm., water to 1,000 c.c.

Indican: Potassium chlorate 1% sol. and concentrated hydrochloric acid C. P. (U. S. P.).

Or Obermeyer's reagent: Ferric chloride 1.5 gm., conc. hydrochloric ac. 500 c.c., or sol. ferric chloride (U. S. P.) 4 c.c., conc. hydrochloric acid 500 c.c.

Chloroform.

Acetone: Sodium nitroprusside (a fresh strong sol.), sodium hydroxide sol. 20%, glacial acetic acid; or ammonium sulphate, sodium nitroprusside (a fresh 5% sol.), ammonium hydroxide (aqua ammonia fortier).

Diacetic Acid: Sol. ferric chloride U. S. P.

Urobilogen: Dimethyl-amido-benzaldehyde 4 gm., hydrochloric acid 35 c.c., alcohol 5 min., water to 200 c.c. and chloroform.

Bile: Tinct. iodine and alcohol or concentrated nitric acid C. P., or furfurol and conc. sulphuric acid.

Chlorides: Potassium chromate, standard silver nitrate sol. (29.06 gm. per l.).

Urea: Bromine, sodium hydroxide sol. 40%.

For Blood Counts: *Erythrocytes*—Normal salt solution, or Toisson's fluid: Sodium sulphate 8 gm., sodium chloride 1 gm., glycerine 30 c.c., distilled water 160 c.c., methyl violet 0.025 gm. (a crystal of thymol in stock bottle).

Leucocytes: 0.5% solution of acetic acid in distilled water.

Differential count, malaria examination, condition of erythrocytes: Wright's staining fluid: 0.33% of dry Wright's stain in methyl alcohol C. P.

Sputum Examinations: Ziehl-Nelson Stain—Carbofuchsin: Fuchsin 1 gm., phenol 5 c.c., alcohol 10 c.c., distilled water to 100 c.c.

Acid alcohol—Hydrochloric acid U. S. P. 3 c.c., alcohol (95%) 97 c.c.

Lœffler's alkaline methyline blue—Saturated alcoholic solution of methyline blue 30 c.c., 1-10,000 potassium hydroxide 100 c.c.

Gram's Stain:

Sterling's solution: Gentian violet 3 gm., analine oil 2 c.c., alcohol 10 c.c., water to 100 c.c.

Gram's iodine solution: Iodine crystals 5 gm., potassium iodide 10 gm., water to 300 c.c.

Acetone (to decolorize).

Diluted carbofuchsin: Carbofuchsin 10 c.c., distilled water 90 c.c.

Examination of Gastric Contents:

Tenth normal solution of sodium hydroxide.
Phenolphthalein, 1% alcoholic solution.
Dimethyl-amido-azo-benzol, 0.5% alcoholic solution.
Sodium alizarin sulphonate, 1% water solution.
Solution of ferric chloride (U. S. P.).
Phenol.

Stool Examination for Occult Blood: Ether, glacial acetic acid, hydrogen peroxide, benzedine.

Microscopic Examination of Smears: Gram's stain.

Renal Function Test: 1 c.c. ampules of phenolsulphonephthalein. Sodium hydroxide sol., 10 to 40%.

Spinal Fluid: Acetic acid 33%, butyric acid 10% sol. in normal salt solution, normal potassium hydroxide solution, colloidal gold solution.

Skin Scrapings: 5% solution of potassium hydroxide.

The following is a list of the reagents necessary to make up the above solutions with the approximate amount of each needed to supply an office laboratory.

Concentrated hydrochloric acid C. P. (about 30%), 2 lbs.
Concentrated nitric acid C. P., 1 lb.
Concentrated sulphuric acid C. P., 1 lb.
Glacial acetic acid, 1 lb.
Solution of ferric chloride, U. S. P., 4 oz.
Benedict's solution, 1 lb.
Or Fehling's copper solution, 4 oz.
Fehling's alkaline solution, 4 oz.
Chloroform, 1 lb.
Ether, ½ lb.
Acetone, 1 lb.
Alcohol (ethyl 95%), 2 lb.
Methyl alcohol C. P., ½ lb.
Glycerine, ½ lb.
Sodium-nitroprusside, 1 oz.
Potassium chlorate, 1 oz.
Tincture of iodine, 2 oz.
Sodium chloride C. P., 1 lb.
Sodium hydroxide C. P. (sticks) ½ lb.
Potassium hydroxide C. P. (sticks), ½ lb.
Aqua ammonia fortier, 1 lb.
Ammonium sulphate, 2 oz.
Silver nitrate, 1 oz.
Sodium sulphate, 1 oz.
Potassium chromate, 1 oz.
Phenol (just enough water added to render liquid—about 95%), ½ lb.
Analine oil, 1 oz.
Iodine crystals, ½ oz.
Potassium iodide, 1 oz.
Hydrogen peroxide, 4 oz.
Copper sulphate—crystals, 2 oz.
Sodium citrate, ½ lb.
Rochelle salt, 2 oz.
Picric acid, 10 gm.
Citric acid, 20 gm.
Potassium ferrocyanide, 10 gm.
Sodium carbonate (C. P.), ½ lb.
Benzedine, 10 gm.
Butyric acid, 60%, 1 oz.
Dimethyl-amido-benzaldehyde, 10 gm.
Dimethyl-amido-azo-benzol, 10 gm.
Phenolphthalein, 10 gm.
Sodium-alizarin-sulphonate, 10 gm.
Gentian violet—dry, 10 gm.
Litmus papers (a small bottle—red and blue) or litmus powder, 10 gm.
Methyline blue—dry, 10 gm.
Fuchsin—dry, 10 gm.
Wright's stain, 1 gm.
Colloidal gold solution, 1 lb.

Most of the above reagents can be purchased from local drug stores. The solutions, such as indicators for gastric analysis, normal and decinormal solutions, colloidal gold solution and stains, may be made up by the pathologist of the nearest hospital, who is usually willing to supply them to physicians at cost.

All of the reagents in the above list, except the colloidal gold solution, may be purchased from the various laboratory supply houses at a cost of about fifty dollars.

The list, of course, may not meet the requirements in all cases, for physicians trained in one hospital may be accustomed to one test for a certain purpose while those from another hospital may employ an entirely different test for the same purpose. But as it stands the list gives a basis from which may be subtracted or to which may be added certain reagents, according to the training and ideas of the physician.

A NEW OPERATION FOR SLIPPING PATELLA

Robert Soutter, Boston (*Journal A. M. A.*, April 19, 1924), passes a strip of fascia lata through a tunnel extending through the patella and the upper end of the tibia at an angle of about 45 degrees.

THE PEDAL GROUPS

FURTHER CONSIDERATIONS

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PHILADELPHIA, PA.

The mechanics of the foot, when considered from the viewpoint of the pedal structures, present extremely complex problems. There is a wide variation in the behavior of the foot structures singly and collectively, and this diversity is increased and altered by the normal and abnormal behavior of the structures of the lower extremity above the ankle joint. The diversity of opinions as to the modus operandi of foot disabilities and their correction is due to a misconception of the true correlation of the structures and function of the foot. When the variable behavior of the structures of the foot and leg in weight-bearing and walking are considered, the fallacy of "propping up" the arches, as a means of correcting foot disabilities is at once obvious.

Simple pronation is an inward movement at the level of the astragalus which is not accompanied with a straightening of the arc of the normal longitudinal arch. It is often treated as a simple inward deviation at the "ankle joint" due to lateral instability at that level. This inward movement is due to a complex variation in the lower extremity. The digressions are: inward rotation of the femur and tibia; inward yielding at the ankle joint when it is relaxed; inward rotation of the os calcis by normal and abnormal movement in the subastragular joint; inward rotation of the midtarsus and metatarsal bones in toto; and a relative outward rotation of the second to fifth metatarsal bones, which produces a torsion strain in them. Simple flattening of the longitudinal arch is less complex, the movement taking place chiefly in the midtarsus. There is also rotation and torsion in the metatarsal bones due to the oblique movement at the midtarsal joint. The mechanism, then, in the production of a valgus foot is found by adding the deviations of pronation and flattening. These mechanical and physical defects, from the viewpoint of anatomy, physiology and pathology must be considered constitutionally as well as locally. Much time is wasted in trying to prop up an ephemeral "anterior transverse arch" which does not, has not, and never will exist, as composed of the distal heads of the metatarsal bones. There is a midtarsal transverse arch at the proximal heads of the metatarsal bones, which is capable of considerable variation. It is increased in tarsus varus, and decreased in pronation and flattening.

The action of the foot in performing its functions in the process of walking consists of two phases: one period for the time the heel is on the ground and the other from the time the heel leaves the ground until the thrust of the toes is completed. The behavior of the different structures in the two phases varies considerably. It is the purpose here to call attention to these variations rather than to discuss the mechanics and nature of the defects.

Anatomically, mechanically and functionally the longitudinal arch is composed of the os calcis, astragalus, scaphoid, cuneiform bones and their metatarsal bones, when the heel is on the ground. Anatomically and mechanically the bones of the feet are divided into two groups, which may be called the "pedal groups": the mesial includes the astragalus, scaphoid, cuneiform bones and their metatarsal bones and phalanges; the lateral is made up of the os calcis, cuboid, and the fourth and fifth metatarsal bones and their phalanges. The mesial pedal group includes the three metatarsal segments, the first, second, and third, each being composed of a cuboid and a metatarsal bone and its phalanges. These metatarsal segments comprise the anterior portion of the longitudinal arch when the heel is raised from the ground, and form the most important part of the longitudinal arch when the heel is on the ground. The outer metatarsal segment, composed of the cuboid, the fourth and fifth metatarsal bones and their phalanges, is a stabilizing structure to a greater extent than it is a weight-bearing structure. When the foot structures and posture are normal, the os calcis and tuberosity of the fifth metatarsal bone are on the ground and bear weight with the distal heads of the five metatarsal bones proportionately as the line of weight-bearing stress. When the heel is raised from the ground, the pressure stress of these bony structures is changed to a tensile stress, which is imparted to them through the tendo achillis, the plantar ligaments, the long and short plantar flexors of the fourth and fifth toes, the plantar fascia, and the peronei tendons. Through the action of these tendons and ligaments, the lateral pedal group becomes a stabilizing structure. These structures, especially the os calcis, act as a lever in supporting the astragalus; moreover, when the heel is raised from the ground the weight of the body is transmitted, through the tibia and fibula, to the astragalus, to the scaphoid, and to the three inner metatarsal segments, the astragalus being supported by the os calcis in accordance with the true suspension principle. (Figs. 1 and 2.) The amount of weight-bearing rendered by the fourth and fifth metatarsal bones is produced by the plantar flexor muscles of the fourth and fifth toes and the fascia and ligaments. The chief amount of change from the normal, in flattening and pronation, takes place in the mesial pedal group.

The greatest strain in the foot, whether its structures be in the normal or abnormal state, is during the act of walking, and not in standing. It is during the period in which the heel is off the ground, in the act of walking, that the true arch principle does not exist. As soon as the heel is raised from the ground, the mechanical principle embodied in the combined structures of the foot, change from the arch to the suspension principle. The percentage of strain at any given point is greatly increased by the discursion of a given part from its normal relationship with its reciprocating structures. The ratio of strain to the angle of deviation is indirect rather than direct. The change from the normal relationship of the several segments of the foot under the stress of weight-bearing and other functions, varies widely in accordance with the relative superimposed weight, the muscle state, the mode of use of the feet, and the type of foot gear.

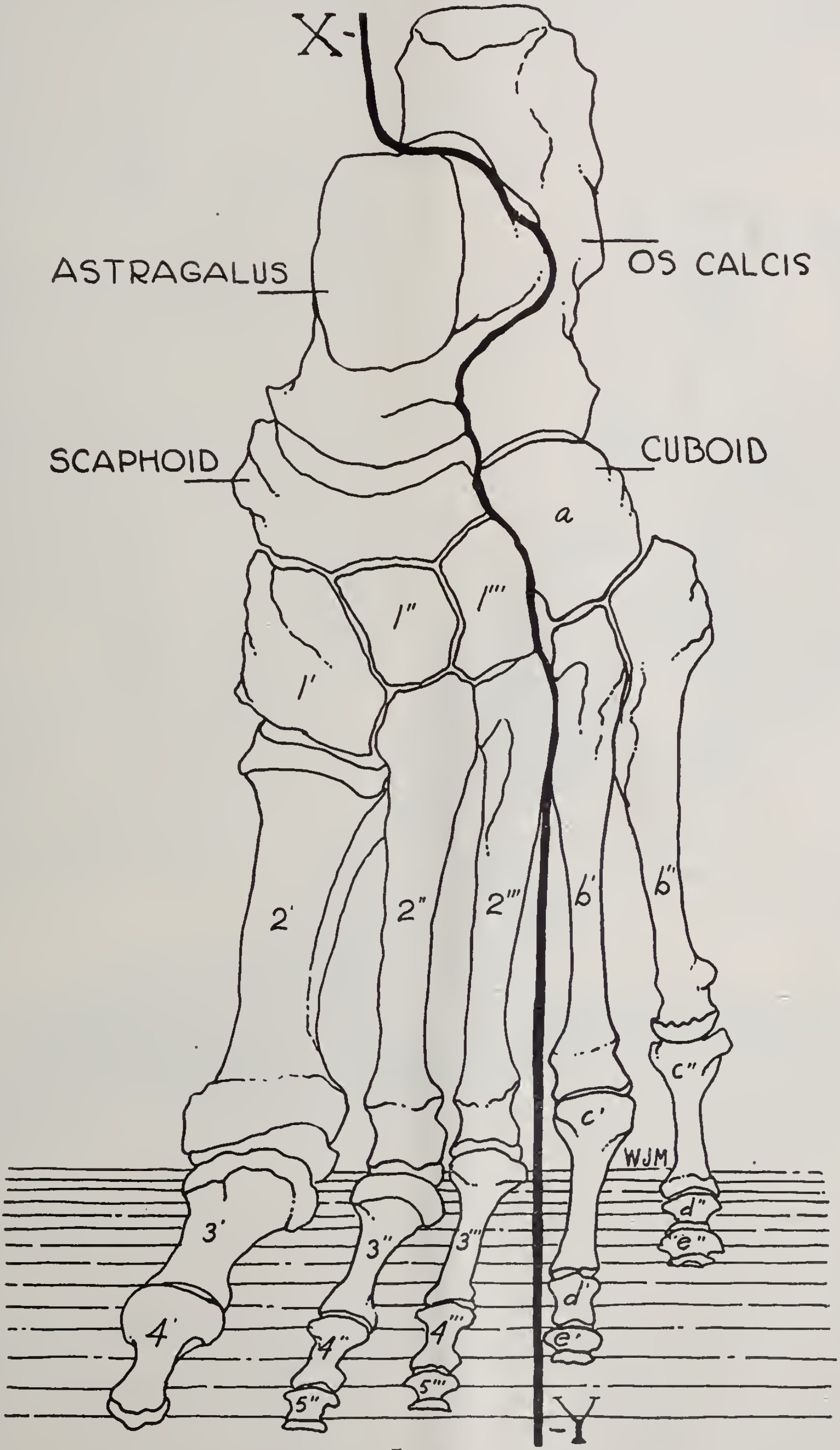

FIG. 1.

Antero-posterior view illustrating the relative distance that the 4th and 5th metatarsal heads are raised from the ground when the heel is raised in the act of walking.

The mesial pedal group consists of: Astragalus, Scaphoid, Cuneiform bones (1', 1'', 1'''), the three inner metatarsal bones and their phalanges (2', 2'' and 2''', and 3', 3'' and 3''', etc.). The lateral pedal group consists of the Os Calcis, Cuboid, 4th and 5th Metatarsal bones (b' and b''), and their phalanges. The line X-Y denotes the line of anatomical and mechanical cleavage between the mesial and lateral pedal group.

Analyzing the mechanical construction of the lateral pedal group, composed of the os calcis, cuboid, fourth and fifth metatarsal bones and their phalanges, and the fascia, tendons, and ligaments that support them, we find the following facts: the pull of the tendo achillis on the os calcis tends to force the latter upward and backward and to cause it to rotate upward and backward on its transverse axis. These movements are prevented by the plantar ligaments, plantar fascia and to a lesser degree by the pressure of the long flexor tendons on the sustentaculum tali. The pull transmitted through the os calcis to the plantar fascia and ligaments is applied to the distal ends of the metatarsal bones. These structures, acting according to the bowstring principle, with the bones of the foot form an arch. The lateral pedal group in most feet does not constitute an arch in the concentric sense, because these bones are in practically a straight line and the force of the ventral ligaments is not sufficient to maintain the principles of an arch in these bones. The points of weight bearing when the heel is on the ground (first phase) are the tuberosity of the os calcis, the tuberosity of the fifth metatarsal bone and the distal heads of the five metatarsal bones. The lateral pedal group is a stabilizing more than a weight-bearing element. When the heel is raised from the ground the structures of the lateral pedal group enter into the mechanism of the foot as suspension and stabilizing fundaments. Arches can only be considered as such, purely in the mechanics of weight bearing in the foot, when the heel is on the ground. It is under this condition that the outer pedal group is a weight-bearing structure in the pressure-stress sense. This pressure stress, in the lateral pedal group, is changed to a tensile stress, chiefly in the os calcis, when the heel is raised from the ground, and the only remaining concentric arch is practically the mesial pedal group. The forces which are applied to the astragalus to force it upward and forward in walking, arise in the tendo achillis and the posterior muscles of plantar flexion of the foot.

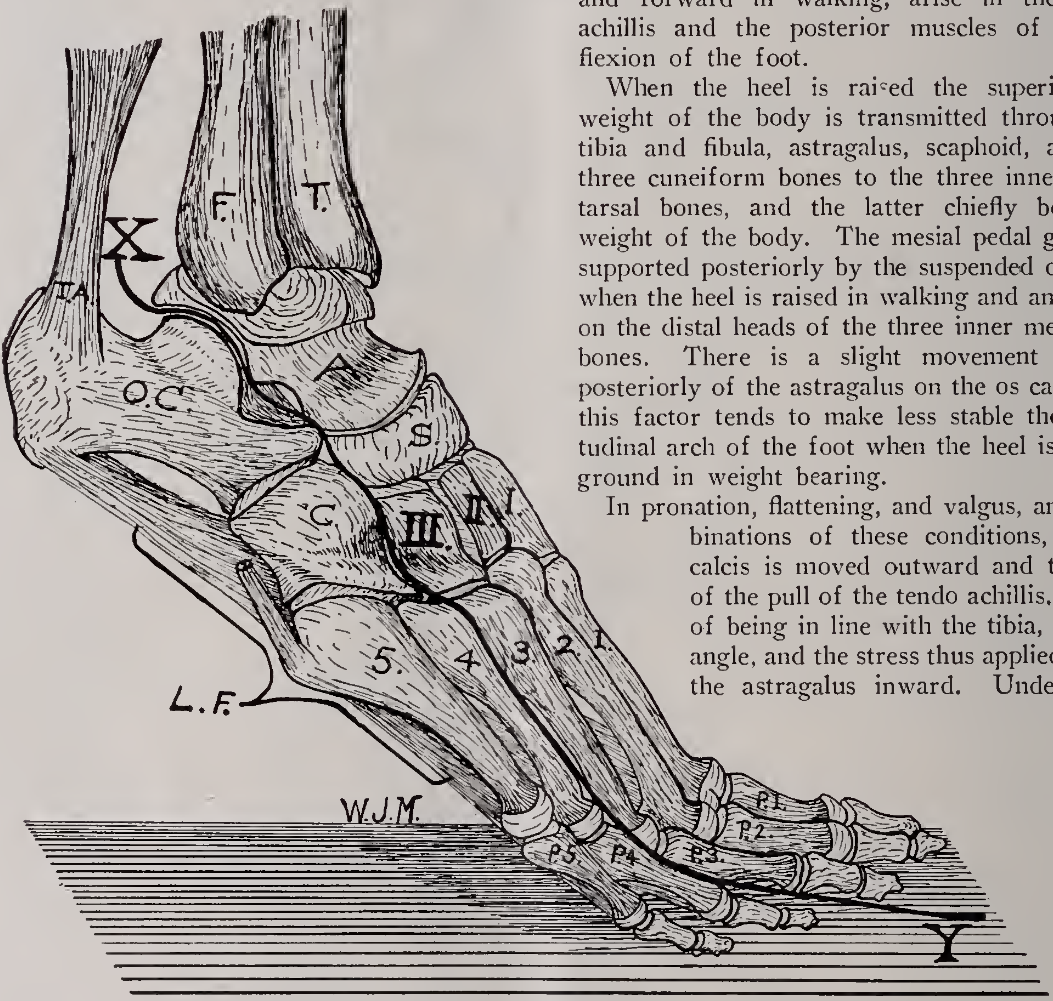

Fig. 2.
Lateral view of heel—raised as in Fig. 1—to illustrate the raising of the 4th and 5th metatarsal heads from the ground when the heel is raised. The line X-Y denotes the anatomical and mechanical cleavage of the mesial and lateral pedal groups.

When the heel is raised the superimposed weight of the body is transmitted through the tibia and fibula, astragalus, scaphoid, and the three cuneiform bones to the three inner metatarsal bones, and the latter chiefly bear the weight of the body. The mesial pedal group is supported posteriorly by the suspended os calcis when the heel is raised in walking and anteriorly on the distal heads of the three inner metatarsal bones. There is a slight movement anteroposteriorly of the astragalus on the os calcis and this factor tends to make less stable the longitudinal arch of the foot when the heel is on the ground in weight bearing.

In pronation, flattening, and valgus, and combinations of these conditions, the os calcis is moved outward and the axis of the pull of the tendo achillis, instead of being in line with the tibia, is at an angle, and the stress thus applied forces the astragalus inward. Under these conditions the strain and disability vary indirectly with the deviation of the os calcis outward and with the stress.

During the process of walking, the heel is on the ground only about two-sevenths of the period in which the foot is in the act of assisting in executing the stride, and the true concentric arch principle exists only for that period. As soon as the heel is raised from the ground, the structures of the lateral pedal group of the foot are supports, mechanically, according to the suspension principle.

In analyzing and treating foot troubles, after the constitutional and local causes have been determined, the chief consideration in a given foot trouble should be applied to the period of time that the weight of the body is borne by the foot when the heel is raised, and the behavior of the foot structures under such conditions of stress and strain should be known.

The proximal ends of the metatarsal bones move inward and downward when flattening or pronation, or both, takes place. Since the distal heads are fixed on the ground, this movement imparts *torsion strain* to the metatarsal and midtarsal structures. This strain produces pain which is usually located in the anterior metatarsal structures. The method of treatment of abnormalities, and the relief of the pain in the tarsal and metatarsal structures due to strain, must be based on these mechanical axioms. It is obvious, then, that methods of treatment must be applied to the weight-bearing structures in accordance with the mechanics of their discursions from the normal. In flat foot, the os calcis has moved forward and downward on its transverse axis, and inward on its vertical and longitudinal axes. The astragalus moves forward and downward; the anterior breadth of its trochlear surface is greater than the posterior breadth, the intermalleolar space has a similar cuneiform shape, and this movement consequently increases the lateral play of the astragalus when the foot is extended. The scaphoid moves downward and inward with the cuneiform bones and the proximal ends of the metatarsal bones. The downward and inward movement of the os calcis carries the cuboid downward and imparts a downward and inward torsion strain to the latter. By these combined movements, a torsion strain is imparted to all of the foot structures, but especially to the inner pedal group.

The restoration to the normal position of these weight-bearing structures must be accomplished by measures which will reëstablish power and tone in the muscles and ligaments, good posture of the weight-bearing structures, correct use of the feet in performing their functions, and supports so applied that the fore foot will be adducted, the midtarsus moved outward and upward, the astragalus and os calcis moved outward and backward and the weight consequently thrown to the outer border of the foot. Supports must be combined with the shoe and stabilized with the sole and heel, or the attempt at correction will fail. It must not be forgotten that the support is only temporary, that constitutional causes must be eradicated, that local measures, such as massage, indicated applications, exercise, etc., must be employed, and that correct use of the feet in walking and standing must be practiced.

PITTSBURGH ACADEMY OF MEDICINE

ABSTRACTS

THE PATHOLOGY OF ARTERIOSCLEROSIS

DR. SAMUEL R. HAYTHORN

Practically all of the studies on arteriosclerosis have been made with reference to the various coats of the arteries. It is necessary, then, to review for a moment the chief anatomical considerations. The intima is made up of from one to three coats, depending on the size of the vessel in question. The inner coat is a single layer of endothelial cells which is continuous throughout the whole arterial system. The layer immediately beneath the endothelium is a white fibrous layer, which is not present in the large arteries of younger individuals but which appears in later life. The layer beneath the white fibrous tissue is the musculo-elastic layer and this lies directly against the media. The media varies in structure with the size and type of the artery. The large arteries, like the aorta, are made up principally of elastic tissue while the smaller vessels, like those of the kidney, contain relatively much more smooth muscle tissue. The intima and media are separated by the internal elastic layer which is more or less obvious in all arteries. The outer coat is the adventitia in which the nutrient vaso vasorum are located.

In presenting the pathology of arteriosclerosis I am using the outline of classification devised by Klotz, and the specimens which I am using to illustrate the points were prepared by him. Klotz is one of the most prominent researchers on arteriosclerosis and has added many points to the subject both from the standpoint of analysis of lesions and through experimental studies. He divided the pathologic changes of arteriosclerosis into those which are primarily intimal and those which begin in the media. The intimal changes are either degenerative in nature or begin as proliferations.

LESIONS OF THE INTIMA

A. DEGENERATIVE

1. *Fatty Streaking:* In this type of lesion nests of cells accumulate just beneath the endothelial lining and are filled with fat, either in granular or globular form. Such lesions occur in many toxic conditions, particu-

larly those following burns, and are a constant finding in acute infections such as typhoid fever and diphtheria. They have been reproduced in rabbits by feeding cholesterol over considerable periods of time. They may go on to hyaline change or they may clear up entirely so that their exact effect on the future of the vessel is not definitely known.

2. *Hyaline Changes:* These changes may be accompanied by the formation of new white fibrous tissue and they may lead to degenerations of the media through interference with the blood supply which comes from the blood in the arteries.

3. *Chronic Endarteritis:* This type of lesion leads to the formation of fatty plaques which undergo degeneration and form cysts containing myelin, cholesterin, fatty acids and calcium salts. After its complete formation it is not possible to differentiate it from the nodules which are primarily proliferative.

B. PROLIFERATIVE LESIONS

1. *Primary Nodular Thickening:* This lesion of the intima begins as a proliferation of the white fibrous layer and in its later stages presents the same picture as seen in chronic endarteritis. It has been reproduced experimentally with streptococcus viridans strains.

2. *Hyperplasia of the Musculo-elastic Layer:* The characteristic change seen in this condition is that of the splitting of the internal elastic layer which leads to an invasion of the media and to the development of atheromatous cysts.

3. *The endarteritis nodosa of Virchow* is a nodular process similar to those already described, save that it is located on the posterior wall of the aorta as a rule, and is also seen in the coronary and renal arteries. Klotz has shown that these nodules produce a distortion of the lumen of the affected vessels.

LESIONS OF THE MEDIA

Medial lesions, like intimal lesions, may begin either as degenerative or proliferative changes, and the latter type may be either in the nature of smooth muscle hyperplasia or of fibroses resulting from inflammatory processes and repair, such as are seen in rheumatism and syphilis. In any case the result is "hardening of the arteries," with loss of elasticity, functional control and decreased blood supply to the part.

Under the degenerative lesions of the media, which are rarely independent of intimal changes, we find the calcium deposits so common in persons over 55 years of age. The early examples are characterized by fatty changes in the smooth muscle and by the deposits of calcium salts in the degenerated areas. These foci usually occur as bands which are discontinuous in distribution and suggest the general arrangement of the tracheal cartilages. Such areas are less common in the aorta than in the peripheral arteries on account of the relatively larger amounts of smooth muscle in the latter.

The proliferative lesions of the media are of two types: (a) those due to muscular hypertrophy, resulting in a great decrease in the size of the lumen of the affected vessel and which are not commonly found outside of the renal and mesenteric arteries, and (b) those due to fibrosis associated with necrosis, inflammation, and repair. Lesions of this latter type appear as extensions from the adventitial coat and are characterized in the media by a melting down of the elastic coats and the development of a low grade granulation tissue. The result is a replacement of the important elastic fibrils and smooth muscle by low grade inelastic scar tissue. The latter type is not true arteriosclerosis pathologically but is constantly confused with it on physical examination.

Medial arteriosclerosis has been produced experimentally by the injection of high pressure producing drugs, such as adrenalin, digitalin and barium chlorid, by diphtheria toxin, which appears to have a selective action upon the media, and by intermittent pressure changes in local areas brought about by mechanical means.

RADIOTHERAPY IN CANCER OF THE BREAST

DR. JOHN F. McCULLOUGH

Cancer of the breast to-day is estimated by some of our leading authorities as making up one-third of all cancer in women. Eighty-six thousand deaths occurred from cancer last year (Mayer), eight thousand of which were from cancer of the breast. A mortality such as that of cancer of the breast should make one keen to diminish it.

Our present day knowledge of the cause of cancer is in a large measure the result of the observations of surgeons, together with the studies of pathologists working in conjunction with the surgeons. Animal experimentation has been productive of much knowledge concerning cancer growth. There has been concerted study and investigation on the cause of cancer throughout the whole world, but little has been established concerning the actual etiology of the disease.

It appears that in spite of the high degree of surgical skill of the present day, the limits of effectiveness of surgery have been reached in the treatment of mammary cancer, and still the results are far from satisfactory. There is still much to be desired for the relief of the victims of this prevalent malady.

Operation early in the disease is advised, but no matter how early the case and how well localized the involvement seems to be at the time of operation, we can never be sure that every malignant cell has been removed, nor can we with the most complete operative procedures in such cases insure freedom from recurrence. When the disease is localized to a small area of the breast and the case is in other respects a suitable one for operation the hope for a surgical cure may be held out only to have the patient die of early metastatic involvement of the vicera. This has been the experience of most surgeons in breast cancer. It is known to every physician that if the disease has spread from the breast to the axillary glands that the chances for the victim dying from cancer are immensely increased. With the most favorable circumstances for operation in cases limited in extent purely to the mammary glands, one out of every five dies from recurrent or metastatic cancer; while with axillary gland involvement, not more than one out of five can be expected to escape death from cancer. In the face of such statistics and knowing that the limits by surgery have been admitted as reached, is it any wonder that in addition to surgery the use of other methods is urged?

The use of x-ray and radium in the treatment of mammary cancer has been widely employed in recent years, and with so much success that the use of these agents is now regarded as a necessity in carcinoma of the breast.

The following experiments have been cited by Pfahler to show definitely that a devitalizing effect takes place. A thin slice of tumor about two millimeters thick was placed upon two sterilized sheets of mica. The tumor was moistened with normal salt solution and enclosed by a vaseline ring to prevent evaporation. This was placed between two radium capsules, giving an intensity of radiation equal to two and two-tenths milligrams of radium per square centimeter. An initial exposure, lasting four hours, to the composite rays of radium prevented the subsequent growth of the tumor when it was transplanted into five mice, a control portion of the tumor "taking" in all of the inoculations.

Francis Carter Wood, a few years ago, by animal experiments demonstrated that a cancer in a mouse in which 100% "takes" was produced, when transplanted would develop to the size of a pea in a week. But if it had been previously subjected to sublethal radiation by x-rays would require three months to develop to the same size.

From these animal experimentations there is rather conclusive evidence that the x-ray has a detrimental effect upon the growth of cancer. There is evidence which points toward this effect being due to the action of the x-rays directly upon the cancer cells. Other experimenters have shown that cancer cells are killed and that cancer growth is prevented by the action of x-rays upon the surrounding tissues. For this latter view clinical and pathological observations offer considerable support. Specimens of breast subjected to radiation when examined under the microscope usually show extensive fibrosis in and around cancer cell nests. Ewing has found strong evidence of local immunity developing in and around cancerous tissue after x-ray and radium treatment.

The effect of radiation therapy upon cancer is recognized by most every one to-day. We all have seen masses disappear under the influence of radiation. We have seen patients supposedly incurable get well and stay well for years. The reputation of radiation in the treatment of malignant disease has been made by its employment in cases too far advanced for operation or with advanced recurrences and metastases after operation.

Every patient unfortunate enough to have carcinoma of the breast should have every chance to live free from the disease as long as possible. When the hope of complete eradication of the cancer can reasonably be entertained and the patient is physically able to stand the operation she should be operated upon. If there is a localized tumor with no lymphatic involvement of the axilla, surgery will be effective. Such cases lend themselves very favorably, both anatomically and surgically, to wide and thorough excision not only of the localized tumor, but also of the large field of threatened dissemination. Such cases offer the most favorable prognosis and present absolute indication for early surgical interference. This group offers the maximum proportion of recoveries and cures. It is from this group that Sistrunk was able to obtain sixty-four five-year cures out of eighty-nine cases operated. The above figures, however, show a large percentage of cases which, though presenting absolute indications for favorable surgical removal, die from cancer following the operation.

Recurrences and metastases are the usual causes of cancer death following surgical interference. As stated above, x-ray and radium have been productive of much good in such cases. Unfortunately the majority of cases that come to the roentgenologist for radiation fall into this group of cases. It is unfortunate, because if these same patients could have been actively treated immediately after operation, in many instances they would have had no recurrence, or at least recurrence would have been delayed for a longer period after operation.

In the light of results shown by the animal experimentation, together with the clinical observations of most radiologists in cancer patients, is it not reasonable to expect that x-rays applied as an antioperative procedure should be productive of better results after surgical removal of the breast. If recurrence, the positive evidence of malignant disease, can be made to disappear, or even is only retarded by the use of x-rays and radium (and this has been demonstrated on numerous occasions), then it is surely reasonable to presume, if cancer be treated previous to operation, that the chances of subsequent extension and recurrence following surgery should be very much less.

Irradiation of cancer in accessible locations, if properly administered, results in devitalization of cancer cells. It results in the production of fibrosis in and around the cancer cell nest. It also results in hyalinization. These conditions inhibit the extension of cancer. The use of irradiation as a postoperative measure is rational and is generally recognized and employed by most surgeons. Radiation before operation is equally rational and should greatly favor improvement in statistics following surgery in breast carcinoma.

THE EARLY RECOGNITION OF GLAUCOMA

DR. C. W. JENNINGS

Some have the impression that glaucoma, so called, is quite rare. But, those of us in ophthalmology know that the condition is ever with us, presenting itself from day to day and from year to year, as a cause for anxiety and study. For one cannot be certain that a patient supposedly cured may continue so. Truly these unfortunates may be observed so long as they live.

As to the etiology, as Dr. S. G. Risly so well says, "It is a disease coming on at an age when the wear and tear, the harrassing vicissitudes, the misfortunes, the exposures, the overwork and vicious living have sapped the physiologic foundations of life, when infections have found entrance to the structure of the organism through the doorway of the epithelium; and a variety of toxic, auto-toxic, and other influences have set up vascular and cardiovascular disease and the associated nephritis, uveitis, high blood pressure, etc." Glaucoma, in fact, rarely occurs in individuals in good general health. The following cases will serve for illustration:

Case 1.—Mrs. S. W. Age 67. *Chief Complaint:* Pain in the right eye. Total loss of sight. Six months ago the patient's right eye watered very much. She had some treatment, but the condition remained the same. At this time she had steamy vision and rainbow halos, but these disappeared. Three weeks ago there was a mucous discharge in the mornings. In the evenings she saw rainbows when she looked at lights. One week prior to onset the right eye had a mist before it in the evening, but was clear in the morning. She did not consult a physician as she expected them to disappear as they had previously. Two days prior to admission her vision became foggy at noon, with pain in eye and brow. The following day the vision was foggy three hours after rising and became progressively worse.

Contributing Causes: Shock of husband's death; worry about her livelihood; infection from the teeth, and iridocyclitis; with probable acute disturbance of metabolism.

Case 2.—Mr. ——. Age 56. *Present Illness:* Opacities in vitreous first noted in boyhood but gave no serious trouble until spring of 1916. About 25 years ago he consulted an oculist who advised his seeing a physician and taking potassium iodid. He did not take iodids for any length of time. In the spring of 1916 the opacities became more noticeable. Vision at this time was normal-plus, in each eye separately. Pupils equal 4 mm.; react normally to light accommodation and convergence. Tension normal. No hemianopsia. Sclera clear. Vitreous showed numerous large and small opacities. In November of 1916, he was sent to Dr. de Schweinitz for consultation. His diagnosis was extensive so-called hyalitis, dependent upon a law grade epithelial choroiditis. A careful study of the metabolism, blood, sinuses, teeth, nasopharynx in search for an auto-intoxication of the intravenous type, and treatment with sweats, and potassium iodid was now undertaken. Patient had taken iodids for some time and over 200 electric cabinet and Turkish baths but was uncertain that treatment had had any influence on the opacities. On December 31, 1923, following a hot bath in which the attendant failed to apply a cold towel to head he saw a halo and following the bath had steamy vision. January 2, 1924, vision right eye 6/9, left 6/6 plus—O. U. Cornea clear. Faint scleral flush far back. Pupils 3 mm. react normally to light accommodation and convergence. Anterior chamber shallow. Vitreous as previously noted. Shallow cupping of disc above. Intra-ocular tension, Schiotz tonameter, O. D. 36.5, 85.31. Form and color field normal. No para central scotomas. Possibly slight enlargement of blind spot. Vision under miotics has remained O. D. 6/9, O. S. 6/10, and the tension O. U. 26.

Impression: No marked evidence of focal infection (except possibly in tonsils). Cardiovascular-renal condition fairly normal for age. Since the onset of increased intra-ocular tension, patient's tonsils have been removed, but there was no evidence of pus, no lues, no tuberculosis.

REPORT OF A CASE OF PERTUSSIS ACCOMPANIED BY MENINGITIS

DR. J. M. DOUTHETT

Pertussis is a prevalent disease among young children. In New York in 1922, two hundred sixty-eight deaths were reported from pertussis, and for 50 years previous to 1916 an average of 341 deaths per annum were reported—with a much smaller population than at present. The number of cases is problematical, as only from 20% to 25% of all cases are reported—which gives a mortality of from 1% to 1½% for the year 1922 in New York. Eighty per cent of all deaths from pertussis occur in children under 2 years of age.

Bronchopneumonia is the most fatal complication. No reference has been found in the literature to meningitis as a complication of whooping cough, hence the following case seems to be unique:

J. S., a boy aged 9, was brought to the office June 19, 1923, with a spasmodic cough, and gave a history of having had it for three or four days. Upon examination a tracheitis and bronchitis was found, and a sedative expectorant prescribed. On the morning of June 23d he was brought back to the office. A diagnosis of pertussis was made and he was given ½ c.c. of Lederle's vaccine hypodermically in the left deltoid region. The next morning, June 24th, he was exceedingly lethargic, with high fever, which had started after going to bed the night before. It was with difficulty that he could be aroused, and he had begun to have convulsions. The lethargy increased and the convulsions grew more frequent, with muscular rigidity of the extremities and neck. Pupils dilated and very sluggish in reaction to light. Dr. Elterich was called in consultation and the patient was sent to the Allegheny General Hospital Sunday evening, where he grew gradually worse, with 4 to 6 convulsions every hour, and died Monday, the 25th, in a convulsion.

AUTOPSY FINDINGS: Acute tracheitis and bronchitis (pertussis); acute focal lepto-meningitis; focal hemorrhages in brain, spleen and adrenal; parenchymatous degeneration of kidneys; toxic lymphadenitis (spleen and intestine).

Brain: On removal of the dura the brain appeared deeply and uniformly congested. The convolutions appeared somewhat flattened and the brain voluminous. There was no obvious exudate in the meninges. At the base of the brain, the Sylvian fissures were very difficult to separate as well as the longitudinal fissure separating parietal lobes. There was no obvious exudate, though on account of the difficulty of separating structures, one gained the impression that there was a proliferation of meningeal tissue. The pons and medulla were congested. No gross hemorrhages were found in cross sections of brain.

Middle Ear: Both temporal bones were chiseled open but no exudate was found.

Lungs: Sections of the lungs appeared normal except for an acute inflammation of the mucosa of trachea and larger bronchi. The alveoli were air containing and no exudate was found within them anywhere.

The epithelium of trachea and bronchi presented a lesion typical of whooping cough. The epithelial layer was everywhere intact but was infiltrated with numbers of polymorphonuclear leucocytes, more numerous nearer the membrana propria. The leucocytes were sometimes in small groups pushing apart the epithelial cells, and they were frequently necrotic and phagocyted by large mononuclear phagyocytes. Beneath and occasionally within membrana propria there was a moderate exudate of polymorphs with few large monos, and in this zone the capillaries were slightly congested.

Characteristic of whooping cough, as described by Mallory, 1912, were the dense masses of minute Gram-negative bacilli which occupied the situation of cilia on the epithelial surface. When few in numbers these lie between the cilia, when most numerous, the cilia seem to have been almost completely replaced by a thin zone of closely aggravated bacilli. Similar bacilli are found in enormous numbers within particles of exudate within the lumen of larger bronchi. Morphologically the bacilli are identical with those described by Bordet and Gengou. They are not present in alveolar ducts or alveoli.

Brain: Sections from various areas of the brain showed numerous small perivascular hemorrhages, and in places small vessels in the gray matter were surrounded by large mononuclear phagocytes filled with orange pigment (probably blood pigment).

In certain sections through the cortex there was a distinct though not abundant exudate of polymorphs, with fewer mononuclears in the meninges, *a definite acute meningitis.*

NOTANDA: The pathology of the trachea and bronchi was typical of whooping cough, though the inflammatory reaction in the mucosa was more abundant than that described by Mallory in his original work in 1912. Demonstration of the minute Gram-negative bacilli in their characteristic relation to epithelial cilia makes the diagnosis of whooping cough beyond a doubt. The absence of bacteria both in culture and sections, with a focal distribution of exudate in meninges, suggests the possibility of toxic injury.

The case impresses one as purely whooping cough of a virulent character, with cerebral lesions and symptoms due either to mechanical or toxic injury as a result of this infection and not to a secondary invasion.

TREATMENT OF "SUMMER DIARRHEAS"

WITH SPECIAL REFERENCE TO DEHYDRATION

DR. Z. R. SCOTT

There is probably no condition in infancy that gives the medical man so much concern as the "summer diarrheas," and there is no condition that causes as high a mortality among infants. When we realize that the diarrheal diseases cause more deaths among infants than all the infectious diseases combined, we can appreciate what a fertile field this is for the application of preventive measures.

Any diarrhea is caused by increased intestinal peristalsis. This increased peristalsis is caused by some irritant acting upon the intestinal mucous membrane. The diarrheas of infants are divided into three groups according to the type of irritant present.

1. Mechanical diarrhea due to mechanical irritation.
2. Fermentative diarrhea due to chemical irritation.
3. Infectious diarrhea due to bacterial irritation.

MECHANICAL DIARRHEA

This type of diarrhea is usually found in infants over one year of age and is caused by the presence in the intestinal canal of undigested or indigestible food particles due to some indiscretion in diet, as the eating of unripe fruits, fruit skins, seeds, raisins, etc.

The treatment of these cases is simple and usually very successful. An initial purge, quiet in bed and starvation period of 12 to 24 hours during which only small quantities of water or soda water are given. Then cereal gruel, skimmed milk and a gradual return to a normal diet as the bowel condition clears up, will usually suffice.

FERMENTATIVE DIARRHEA

This is a much more important condition and is the most common diarrhea of infancy. The most frequent predisposing causes are, overfeeding of sugars, overheating and infection outside the intestinal tract, which lowers the digestive capacity of the child. Now if, in addition to one or more of these predisposing factors, there is abnormal decomposition of food in the intestine brought about by bacteria already there or introduced from without, usually in the milk, there is a very definite irritation in the bowel. The fermentation of sugars by bacterial action liberates the volatile acids such as formic and acetic and the nonvolatile acids such as lactic. The volatile acids are the ones that cause the irritation and hence the strongly acid stools with red excoriated buttocks.

If seen early a purge should be given, the sugar reduced or eliminated from the diet and the feeding boiled. By gradually returning to a normal diet the case will usually clear up nicely. One thing to be kept in mind in these cases is the fact that some infants have a low carbohydrate tolerance and in such cases the percentage of sugar in the formula should be kept below this point.

Unfortunately, there are the more severe cases of fermentative diarrhea. These are usually seen during the hot, oppressive days of midsummer. The baby will have five to fifteen green, watery, strongly acid stools a day; red excoriated buttocks; temperature 100° to 103° and usually give a history of being fed on some proprietary food or unboiled cows' milk. If proper treatment, as formerly outlined, is instituted in these cases they usually clear up without much difficulty. If neglected at this stage, the case may develop into the more serious condition of "alimentary intoxication." The child then begins to show very definite evidence of prostration, with subnormal temperature, fontanelles, eyes and abdomen sunken, skin loose and inelastic, dulled mentality and stupor. The severe prolonged drainage of water from the body has developed the typical picture of dehydration and now instead of a local intestinal condition, there is a general derangement of body chemistry.

The treatment should be directed to controlling the diarrhea, instituting proper diet and replenishing the fluid content of the body. Routine purgation in such cases is inadvisable. It is only keeping up irritation and peristalsis to purge a child who has already emptied the intestinal canal of irritating material and it only causes further drainage of body fluids, the one thing that is strongly contra-indicated.

Where the child can take and retain its feedings this is the most important part of the treatment. As has been shown, the condition is the result of the action of bacteria on the sugars. If the food given contains little or no carbohydrate the tendency of the organism is to die out.

Cases are frequently encountered which are unable to retain or positively refuse to take the kind of food indicated. In such, lavage of the stomach and feeding through the tube will often serve the purpose. Where they are unable to take and retain one quart of fluid in twenty-four hours the indication is to supply fluids in some other way.

The control of the diarrhea at this stage is advisable, as further unnecessary drainage of water from the system lessens the chances of recovery. Opium in some form is strongly indicated in order to control peristalsis and prevent evacuation of fluid. The only contra-indication to opium is in early cases where the intestine has not been completely emptied of irritating material. If properly used, it is a valuable drug in the treatment of severe gastro-intestinal conditions.

Colonic irrigations are of little use except early, in order to clear the lower bowel of foreign material. In fact they may do harm by stimulating peristalsis and disturbing the child.

Where stimulation is indicated, which is frequently the case in a disease which draws so strongly on the vitality of the host, brandy may be of use. Digitalis and caffein in appropriate doses are also used as indicated.

There is a protein form of fermentative diarrhea which makes up a very small percentage of these cases and in which the intestinal contents are infected with bacteria which thrive on protein.

The differentiation is made by the character of the stools. Here, instead of the strongly acid, green, watery stools with a sour odor, the stool is yellow, watery, foul smelling, alkaline, and does not cause redness and excoriation of the buttocks.

The treatment is the same as for the carbohydrate form, except here a high carbohydrate diet is used.

INFECTIOUS DIARRHEA

This is the most dangerous type of intestinal condition in infancy. It is a true infection of the intestinal mucous membrane due to a specific organism, usually the dysentery bacillus, less frequently the gas bacillus. It is most frequently a primary infectious condition, or it may be secondary to a fermentative diarrhea. Like many other acute infectious conditions it may vary in its severity. Mild cases may show practically no general symptoms yet have five to ten stools a day, composed almost entirely of blood, mucus and pus. Other cases will show extreme prostration, the body will become rapidly drained of fluids and acidosis usually develops.

Clinically or from gross examination of the stool there is nothing to distinguish the two types of infectious diarrhea, and only by a bacteriologic examination of the stool are we able to determine to which group a case is due. From the standpoint of dietetic treatment, this distinction is very important, as the dysentery bacillus thrives very readily on protein and produces large amounts of toxin, while the gas bacillus grows best on a carbohydrate diet. Therefore, the indication is to feed the cases due to dysentery bacillus on a high carbohydrate diet and for this, six to eight per cent lactose in barley water is first used. As the stools get better, small quantities of skimmed milk are added. The feeding of the gas bacillus cases is just the opposite. The organism thrives best in a carbohydrate medium. Therefore a high protein diet is indicated. Milk which has undergone fermentation with the lactic acid bacillus serves very well in these cases as does any feeding low in sugar and high in protein.

The general treatment of infectious diarrhea is practically the same as for fermentative diarrhea and the dangers of dehydration and acidosis from severe draining of body fluids is just as great.

DEHYDRATION

The chief complication of gastro-enteritis in infants, when accompanied by severe prolonged diarrhea and vomiting, is dehydration, and in hospital work this is the most frequent and alarming complication. This obtains because the cases which are brought to the hospital are usually of long standing and in the terminal stage of a severe summer diarrhea. Frequently such cases are in a moribund condition and any treatment must of necessity be active if they are to be saved.

As a result of rapid draining of the fluid portion of the blood and tissues and the inability to take and retain a sufficient quantity of fluid to keep up the normal fluid balance in the blood, there results a diminished blood volume; increased viscosity and diminished rate of flow, giving an accumulation of toxins and acid products in the blood; passive congestion of the kidneys and diminished urinary output.

Following this derangement of the body chemistry there are definite objective signs: The fontanelle, eyes and abdomen are sunken; the skin takes on an ashy appearance, its elasticity is lost and it stands up in folds when pressed between the fingers; the mentality is dulled and in addition to presenting a typical "washed out" appearance, there is the picture of a rather severe acidosis.

The main indication at this stage is for immediate replenishment of the body fluids. When the child is unable to take by mouth and retain fair quantities of fluid, this must be furnished in some other way. The four remaining available routes for its administration are rectally, subcutaneously, intravenously and intraperitoneally.

The rectum in these cases is usually intolerant and it is impossible to get sufficient fluid absorbed to be of special benefit. In fact, in most cases it is harmful because it stimulates peristalsis and increases the evacuations from the bowel.

The subcutaneous administration of fluids was formerly used extensively, but has been largely abandoned because it is a painful procedure and the amount that can be introduced into small infants is far short of the need of the average case.

The practical difficulty of entering the veins of an emaciated infant is obvious, especially if this be necessary once or twice a day for several days. However, where the case is especially urgent the intravenous method should be attempted. The introduction of fluid by way of the longitudinal sinus is less difficult, but attended by far greater danger and the repeated injection of large amounts of fluid is impractical.

During the last two years the intraperitoneal method has been used by the writer on those cases at the Childrens' Hospital and has been found to be the most satisfactory and beneficial means of introducing fluid in these cases.

In giving the injection, three precautions should be observed: first, if the bowel is distended with gas, it should be relieved because of the danger of perforation when introducing the needle; second the bladder should be empty for obvious reasons; third, introduce the fluid slowly and stop if there is evidence of respiratory embarrassment.

The injection is made through the median line, just below the umbilicus. The skin is sterilized in the usual manner and all aseptic precautions are observed. A moderately large, short-bevelled needle is used, which is inserted into the abdominal cavity pointing upwards at an oblique angle. In this manner 100 to 300 c.c. of solution is allowed to slowly run in by gravity. The amount of the fluid will depend upon the size of the child and the abdominal distension present. Animal experimentation and postmortem examination of infants dying shortly after injection have shown that the fluid is absorbed comparatively rapidly.

The advantages of this method are: the fluid is quickly absorbed; the method is a simple procedure; it is practical and permits of repeated injections at frequent intervals with minimum danger.

As the fluid of the body is replenished the dehydration disappears, the general appearance improves, the toxemia clears up, the skin becomes more elastic, there is increased urinary output and general evidence of improved circulation. The case is thus sufficiently improved to allow proper adjustment of diet and further attention to the gastro-intestinal condition.

POISON IVY DERMATITIS

ITS CAUSE, TREATMENT AND PREVENTION

DR. SAMUEL H. JOHNSON

Cause: The medical profession is acquainted with the plant, Rhus Toxicodendron, which is the causative factor of this type of dermatitis. The most recent authoritative work shows that the active principle of poison ivy is a substance of a glucosidal nature and is nonvolatile even when mixed with acetic acid or alcohol.

Symptoms: Some people are immune to this disease, others are slightly susceptible, others quite vulnerable, while not a few can scarcely go near the plant without an attack. In some cases a gradual immunity to the disease seems to be established as the patient grows older, but this is exceptional rather than the rule. The irritation from exposure may be almost immediate in appearance or it may appear some hours or two days after exposure.

It may present a diffuse erythematous rash with or without edema or swelling or it may simulate an erysipelas, with which disease it is often confused. In some rare cases and in extremely sensitive individuals the whole body may be affected, and there may be grave constitutional disturbances. In cases of four to five days' standing a superimposed infection may be added, complicating both the clinical picture and symptoms presented by the patient.

Diagnosis: Poison ivy is most often confused with acute eczema and erysipelas. It differs from acute eczema in the history of onset, exposure, the type of eruption being vesiculobullous, superficial in character with marked acuteness. It differs from erysipelas in history, lack of severe constitutional symptoms, as severe chills, headache, fluctuating temperature, lack of peripheral spreading, elevated, demarcated border with induration and clearing at center, with beginning at one point only and no subjective pruritis.

Treatment: Endermic tests may be made to determine whether the toxin was that of ivy or sumac but this is not indispensable and treatment can be carried out without awaiting the test results. The endermic test is made by injecting .05 c.c. of each of the glucosidal vegetable toxic solutions, ivy, sumac, and also the diluent under the epidermis. A tentative opinion can be arrived at in twenty-four hours, but it will be definite only after forty-eight hours. Positive reaction is indicated by a papule, redness and tenderness at the site of the injection. The recognized treatment of to-day for poison ivy is the toxin treatment as advocated by Strickler in 1918. It consists, as now modified, of the intramuscular injection, with the mouth treatment as advocated by Schamberg. The patient suffering from the disease is given 0.5 c.c. to 1 c.c. intramuscularly daily for three to four days. Symptoms usually subside in twenty-four hours. Two injections usually suffice. Schamberg advocates the mouth treatment for poison ivy dermatitis. The formula he suggested consists of Tr. Rhus Toxicodendron 1 c.c., Alcohol 1 c.c., Syr. of Orange, sufficient to make 100 c.c. He advocates taking a dose three times a day after meals. Starting with two drops after breakfast, four drops after lunch, six drops after dinner, then increasing two drops with each dose until eighteen drops are taken, then he directs that one teaspoonful once a day be given diluted in water.

If the above method is used, the old method of using local applications as, alcohol, lead water, black wash, potassium permanganate, etc., may be discarded.

Prevention: In order to desensitize the patient the combined method appears logical; that is the intramuscular injection and the mouth treatment. Four injections of 0.5 c.c., 0.5 c.c., 1 c.c. and 1 c.c. are given at one week intervals. Schamberg's formula is given, as described before, up to the teaspoonful dose, which is continued through the summer season. It is probable that the desensitization obtained from poison ivy is a tissue immunity that has to be frequently renewed.

CHANGES IN THE ALCOHOLIC

DR. C. J. ELLIS

In the years from 1908 to 1918 the number of alcoholics seen in a year at the Allegheny County jail varied from 1,200 to 1,800. These numbers included every case which suffered from the effects of alcohol in any way, and of these numbers, a large percentage were chronic alcoholics, and each year from eighty to one hundred of these chronic alcoholics developed delirium tremens.

The year of 1919 showed a very marked change in the number of cases. The total for the whole year was 794, but 703 were admitted during the first six months, while the last six months there were only 91 cases of alcoholism treated. In 1920 there were 586 cases, with only 8 developing delirium tremens. In 1921 there were 649 patients, of whom 12 developed delirium tremens. In 1922 the number was still on the increase, 1,044 alcoholics coming under observation, with 20 developing delirium tremens. The year 1923 showed a further increase, 1,295 cases being seen, 22 of these developing delirium tremens.

This steady increase is easily explained by the fact that the alcoholic who lands in jail is a man without money, and at first following the enforcement of prohibition, he was not able to purchase any alcohol. They had not learned how to obtain alcohol, and the price of whiskey was beyond their reach. The "kick" in Jamaica ginger was soon discovered and its price not being excessive, it became the favorite drink among this class of men during the latter half of the year of 1919 and the first few months of 1920. But the prohibition officers soon stopped the sale of this entirely. During the remainder of the year of 1920 and also in the year 1921 they were compelled to fall back on the different alcoholic preparations sold for external use, such as: Alcorub, Alco-massage and similar products. These drinks were not expensive, and if they knew how to take them the usual nausea and vomiting could be avoided. This could be obtained by diluting them sufficiently (usually with pop), or by chewing gum vigorously after the first drink. It was also discovered that the majority of the mixtures of denatured alcohol would not kill, and that the resulting sickness was not much worse than that caused by cheap whiskey. At first they dared drink only certain kinds of denatured alcohol, but later they made no distinctions and drank any kind.

In 1922 the increase in the number of cases was nearly 400, and in 1923 a further increase of almost 300. This increase is due to the fact that moonshine has taken first place with this class of drinkers. It is apparently very easily obtained, and it can be purchased for about two dollars a quart. The supply is apparently increasing and these men seem to know where they can get it without any trouble. It is not sold in the saloons, but in the little stores and restaurants.

Between July, 1919, and the middle of 1922 the chronic alcoholic had almost disappeared from among the alcoholics coming under observation in the jail. The number of cases of delirium tremens was very much lowered on account of the decrease in chronic alcoholism. This is explained by the inability of these men to obtain enough alcohol to drink steadily. Since moonshine whiskey has become their prevailing beverage, chronic alcoholism has increased noticeably although the number is still less than before the enforcement of prohibition. The number of delirium cases has also increased.

Dr. Lambert, in his writings, has stated that delirium tremens develops only in those cases of chronic alcoholism, which are of five or six years' duration. This statement will not apply to the moonshine drinker, as numerous cases coming under observation during the last year and a half or two years, have been drinking steadily for periods as short as from two to six months, before developing delirium tremens.

The character of the delirium does not differ much, but the duration seems to be longer, from about three to six days in our cases. Formerly delirium tremens began very abruptly, usually in the evening, and ran a course of three to five days, terminating in sound sleep, followed by a clear mentality, while the great majority of our recent cases have lasted from five to seven days. The delirium increases gradually and after the fourth or fifth day begins to subside gradually with occasional naps.

In the cases of acute alcoholism at the present time a great many more suffer from very severe gastric symptoms than formerly. In at least fifty per cent the gastritis is the most prominent symptom. An amnesia is also very common among the acute cases, which may persist from twenty-four to forty-eight hours after they are in jail. The acute gastric symptoms seem to be more frequent in the moonshine drinker than they were in the alcohol drinker. This may be due to the fact that larger amounts of moonshine are obtainable than was the case with alcohol.

TREATMENT OF LEUKEMIAS, HODGKIN'S DISEASE AND LYMPHOSARCOMA BY RADIATION

DR. RALPH V. ROBINSON

The treatment of leukemias by radiation is justified almost entirely by the clinical evidence of its usefulness rather than by any definitely proved reasons why this method is used or how it accomplishes its end. That there is an amelioration of the symptoms, both clinically and physically, of the disease by lessening the severity of the several changes accompanying it, is easy to show; and that the fatal ending of the disease is deferred for a more or less brief period is also shown.

Pathological cells in the blood, such as myelocytes are very easily destroyed, and here, if one may compare these cells to cancer cells, a reason for so treating malignant new growths by radiation is shown—aside from the clinical aspect; or again one may consider these blood conditions to be malignant neoplasms.

Lymphatic leukemia, in which the blood shows abnormally large numbers of lymphocytes, responds surprisingly to treatment. In from 24 to 48 hours following treatment, the number of cells, which may be in the one hundred thousands and up almost to a million per cu. mm., falls to the thousand class and this low level (never as low as normal) is held for an indefinite period—sometimes for weeks—when the number again climbs to its former high level.

When enlargement of the lymph chains is met with in this disease, they also are modified, softening and decreasing in size and at times disappearing. This modification of glandular enlargement seems to occur more or less in all the different sites, such as cervical, axillary, abdominal, inguinal, etc., regardless of the area or areas treated, but much more markedly so directly under the site receiving the dose.

Myelogenous leukemia, with its pretty blood picture, is influenced as the lymphatic type; the blood approximating a normal appearance, the pathologic cells being readily destroyed—but not staying so.

Hodgkin's disease, with its masses of enlarged glands and in some cases the classic collar, will be put here in the discussion, because, while it presents no typical blood picture nor in fact any definite blood changes, it does present under treatment a behavior resembling that of the leukemias. Here again we find the benign influence of radiation, gland masses retrogressing on treatment, slowly to be sure, and only temporarily, recurring until the disease has run its course.

Results of Treatment: Amelioration of pain; lessening of discomfort from pressure due to tumors; making blood more nearly normal; regulating metabolism—improvement of general health and vigor.

Dangers of Treatment: Immediate—x-ray sickness; too rapid and too great a destruction of blood tissue and blood-forming organs. Remote—burns, acute or chronic; telangestasia—all causing a condition making a continuation of treatment, which is so necessary, a dangerous proceeding.

Duration of Treatment: As long as necessary to keep the symptoms in check.

Termination of Treatment: Death—1½ to five years.

Method of Treatment: Radiation applied to gland masses, spleen and long bones.

Dose: Mild doses applied at regular intervals tend to keep the blood picture more nearly normal and tumors smaller. By mild doses is meant doses just below those causing an erythema and produced by using potentials between 75 and 90 K. V. through three to five millimeters of aluminum for 7 to 10 minutes at 10 to 12 inches skin target distance.

Frederick B. Utley, M.D., Secretary.

PHILADELPHIA GENERAL HOSPITAL

MONTHLY CASE REPORTS

BY THE STAFF OF THE PSYCHOPATHIC DEPARTMENT

Mental depression is common to disturbances of metabolism, and also to cardiac and renal disturbances, and it is often the first symptom of paresis. In the wards of a hospital such as this, however, there are found many cases of true melancholia which is often described as a disease entity. The following case is a typical melancholic, of interest to the general practitioner because it can be relieved by attention to visceral conditions.

A man of forty-five years, no previous mental disorders, slightly gray, thin and tall, slightly stooped, narrow chest, long waist, small capacity abdomen, with ptosis of the stomach and intestines—the asthenic type. Blood pressure low, the heart having certain arrythmias, the skin slightly tinged with brown. Appetite very poor, increased gastric acidity, marked constipation. Urine contains a trace of albumin, no casts, abundant indican, some acetone. Blood picture normal. X-ray of abdomen shows the stomach pretty well down in the pelvis, the colon very much ptosed and very spastic. The whole tract exhibits hypermobility and, as in most cases of this type, an area of bowel narrowed in lumen and without the usual peristaltic contractions in this area and with an appearance of mucus flecked with barium in long strings. The stool confirms the fluroscope, showing the mucus and also exhibiting occult blood.

There is evident colitis which may be the cause or the result of the mental condition; whichever it is, attention and treatment directed to this physical disorder improves and eventually terminates the mental depression.

The very obvious mental state is not the whole trouble, but is only one link in a vicious circle in which the less obvious colitis is another. Break the circle at any point it can be attacked and when there is an amelioration of the trouble there will be a corresponding disappearance of the distressing mental characteristics. Without treatment for colitis this man would probably have become a confirmed melancholic; with treatment he was a perfectly well man in six months.

This condition of the colon we frequently see in these cases, and as invariably treatment directed toward it brings about the recovery of the patient we feel convinced that too little attention has been paid in the past to this accompanying physical phase of melancholia when it occurs between twenty-five and forty-five years of age. With the availability of the x-ray apparatus and laboratory tests this diagnosis is now possible to the general practitioner.

Seymour De Witt Ludlum, M.D.,
Visiting Physician to the
Neuropsychiatric Dept.

Dr. O. Pine queries: In that idle moment in the office, why not use the time reviewing the literature on some interesting point in your latest case concerning which you thought you knew all that there was worth while, and possibly find that knowledge could be amplified?

ABSTRACTS

From the American Journal of Obstetrics and Gynecology, Vol. VII, No. 2.

CHAS. SCOTT MILLER

PHILADELPHIA, PA.

Blood Sediment Test: Bernhard Friedlaender.—Sedimentation time of human erythrocytes is a nonspecified biologic reaction indicating the suspension stability in the blood which has been rendered noncoagulable. The author shows the importance of establishing a correlation between pathological conditions and the time required for sedimentation. His article is well written and traces first the history of these tests and second a clear discussion of the etiology. He goes into detail as to the method employed and compares a study of 300 apparently healthy persons as well as 128 cases of pregnancy. Further study is made in certain pelvic inflammatory conditions and the conclusion drawn is that the test is of especial value in this group of cases; especially in the absense of leucocytosis and with a normal temperature. Latent infections seem to be indicated by means of a rapid sedimentation, whereas if the test is delayed beyond two hours, it seems to be indicative of a safe operative risk. Malignancy causes a quick sedimentation of the red blood cells but after the tumor has broken down the time of sedimentation becomes very much accelerated.

Application of this test has also been made to surgical and medical conditions, and apparently, from the deductions of the author, it would be well to adopt this test as more of a routine measure in checking up, more especially in surgical procedures.

As an aid to prognosis, the blood sediment test seems to add considerable evidence to the clinical picture.

In conclusion Dr. Friedlaender makes the following deductions:

1. No practical results in the diagnosis of early pregnancy, but after an enlargement of the uterus to about the fourth month negative findings aid in differentiating pregnancy from tumors.
2. Of slight aid in diagnosis of ectopic gestation before the period of rupture. After rupture the sedimentation time resembles that of pelvic inflammatory conditions.
3. Of great value in confirming active pelvic inflammatory conditions, especially in the absence of definite clinical symptoms.
4. Of especial value in differentiating latent from active pelvic inflammatory disease and judging the safety of operative procedure.
5. Of value in excluding adnexial disease before performing the operation of dilation and curettage.
6. Of value in medical cases for the purpose of excluding infectious processes.

As a whole, the procedure is so simple and offers possibilities that cannot be overlooked by the progressive clinician and surgeon of today.

Dr. O. Pine queries: Following the quack diploma scandal, why not a patent medicine exposure next, in order to enlighten the public and public servants? Apathy always requires sensational alarms!

Dr. O. Pine queries: Does not lurk in your cranium somewhere the thought, if not the wish, that some sensational *nouveau riche*, after he has done all that can be done to impoverish the medicos with free-for-all clinics, will construct magnificent palaces throughout the land for retreats for the obsolete medicos who have become a public charge?

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MAY, 1924

EDITORIALS

FOOD FOR THOUGHT

When the Medical Society of the State of Pennsylvania was organized, it was done so as a representative body, with an apportionment of delegates from the component county medical societies. For a number of years the delegate body thus constituted was not too large for the discussion of important subjects, and the ready transaction of business. With the rapid increase in the membership of the county societies, there was a corresponding increase in the members constituting the House of Delegates. Notwithstanding this increase in number of delegates, and the tremendous amount of business that accrues at each annual session, it would not be surprising if at times the House of Delegates would appear to be a body unwieldy for the transaction of business. Members of the House desire to attend the scientific sessions, in addition to their duties as delegates, and every thought is given to reducing to a minimum overlapping of the two.

Routine business of the House of Delegates could be handled in less time and more efficiently if the delegates attending the annual session did not constitute a body annually changing in personnel. Where county societies are continually changing their delegates, there is not the proper representation of all sections, nor continuation of work from year to year along definite lines.

The volumes of the JOURNAL published by the Society mark the steady and continued growth of the Society. The power exerted by such a publication as a medium of communication among its members is inestimable. The very happy combination of the JOURNAL with our neighbor, the *Delaware State Medical Journal,* should be the means of rapidly coalescing New Jersey, Maryland and the District of Columbia. Our Society is desirous at all times to do its utmost to further matters appertaining to medical education, to the public health, to legislation, and to the welfare of the profession. The influence of our Society is a potent factor, appreciated more and more each year, and a very definite idea can now be formed of the great possibilities to come from organization on a definite and practical plan. The good results to accrue to the profession as a whole, and to every member as an individual, are so positive that no subject can deserve more careful consideration by this body than that of medical organization. It is the fundamental question before us, and upon its successful functioning depends the result of all our other efforts in all directions. Therefore, in order that the greatest good may be done for the greatest number, the component county medical societies, having elected an efficient secretary, should continue him from year to year, and the delegates who are efficient should be annually returned to the House of Delegates. F. C. H.

HOW THE GENERAL PRACTITIONER MAY ASSIST IN THE CONSERVATION OF HEARING

It is a great misfortune for a person to be blind. Very active, systematic effort is being made by our profession to conserve eyesight. It is also a misfortune to be deaf or to have very poor hearing. It disqualifies a person for many an important work or position. Why should not the same organized, systematic effort be made to conserve hearing that is made to conserve eyesight?

Every infant or small child having a cold in the head is liable to become deaf or suffer from impaired hearing. One often learns of a child having had earache during the night and no medical advice was sought. There are many people living now who are past middle life who are either deaf or have impaired hearing, who give a history of having had a running ear and who received no medical care, and such neglect is common even in this day. There are many life insurance companies who would not accept such a risk.

A systematic effort should be made to educate mothers to give very early attention to every little child complaining of pain in the ears. The nose and throat of every little child should receive an examination by one who is competent to determine the existence of adenoids and chronic infection of the tonsils, and if present to give the proper treatment. Every physician doing general work should bear in mind that the examination of an infant or small child having a cold in the head is not complete until the drumheads are carefully examined with an otoscope. It is remarkable how often the middle ear will be found to be involved in infants and small children, if the physician will go to the trouble to make a routine examination of the drumheads as regularly as he does of the throat.

If the child had earache during the night, the physician may find the drumhead bulging the next day, even if the child does not complain of pain at the time of his visit. Bulging of the drumhead will lessen the pressure and this may account for the relief of the pain, but this is no excuse for failure carefully to examine the ear. If the drumhead is found to be bulging, the attending physician should immediately call in an aurist to incise it and direct proper treatment, and if he fails to do so he is morally responsible for the impaired hearing that may result from such neglect. If, in infants having an obscure fever, the drumheads would be regularly examined, the physician would often find here the explanation. If the drumheads are simply congested, the physician should institute proper treatment at once and make an effort to check a disease so easily overlooked and for which so much may be done.

While there is much being done to educate mothers and the public along these lines, I feel there is not enough done, and the effort is not sufficiently organized and systematic to reach all the people who should be informed and impressed as to the value of timely care to the ears of those who suffer from colds and other infections of the head and thus conserve the hearing of those who will follow us.

The committee on health and public instruction of every county medical society could do much along this line, until every practitioner becomes the guardian of the physical welfare of the people who employ him. By virtue of the special and comprehensive training of the physician no one is so well qualified to be the teacher of his people along the lines of preventive medicine.

G. E. H.

TOO MANY MEDICAL SOCIETIES

A great deal is being said here and there about the multiplicity of medical societies, which applies equally to community, state and national organizations. Much of the comment is true, and something should be done to reduce the number, where there is not a real need. It is, however, a well settled proposition that every existence or activity is the inevitable result of antecedent forces and causes. Considering the medical profession primarily to have been a uniform aggregate, and that to-day it is a group of dissimilar parts, is further evidence of continuous differentiation of the medical fraternity, and has resulted in concomitant integration of the parts, with increased definiteness of structure and function, which is the outgrowth of higher education. Organizations, therefore, exist because of these complex changes and forces, within and without, which have wrought out their formation and growth. Many societies not only are of benefit to the members, but are a source of progress and enlightenment; while others are of no value whatever, but continue for reasons best known to a few. Individual societies, when there is a need for their organization, should be encouraged to exist, but the need for them should be definitely shown. F. C. H.

FROM BATHTUBS TO LEGISLATION

It is a far cry from our present treatment by hydrotherapy to the conditions described in the following newspaper clipping:

"The first bathtub in the United States was installed by Adam Thompson, a wealthy grain and cotton dealer of Cincinnati, in 1842. He had lately returned from London, where he had heard that the prime minister had such a device. On December 20, 1842, he had a party of gentlemen to dinner, all of whom tried out the new invention. The following day the story was in the papers and Thompson was attacked both by doctors and politicians. We do not find that Thompson was required to pay a fine, but the discussion in connection with the bathtub resulted in various measures for the restriction of their use. The common council of Philadelphia considered an ordinance to prevent any such bathing between the months of November and March. Virginia laid a tax of $30 per year on all bathtubs and extra heavy water rates. In Boston there was an ordinance forbidding their use except on medical advice."—*Frederic J. Haskin.*

All this took place 82 years ago, but at that, we have no cause to feel so dreadfully superior. It is only a year or two since the Legislature of Kentucky failed by two votes to pass a law forbidding the teaching of evolution within the state. The trinity of ignorance, superstition and bigotry may have abdicated its throne, but we are only deceiving ourselves if we assume that its subjects are not plotting a return to power; for while truth invariably conquers in time, evil always dies hard. It is worse than the cat with nine lives.

Medicine had its origin in ignorance and superstition, and the wonderful progress made in this benevolent science has yet touched but a small proportion of the population of the earth. Even among the medical men themselves there are "Fundamentalists" and "Modernists," and it behooves the more enlightened to guard well their enlightenment lest some reactionary outburst extinguish it.

Furthermore it is not sufficient to fight with antiquated weapons. The old-fashioned physician thought that his defense lay in his ethics, in his strict adherence to duty. Far be it from us to belittle this point of view, for it has made medicine what it is; but in these days when bigotry and quackery are fighting for their very life, ethics and duty are not sufficient defense. The fight must be carried into the enemy territory, or medicine, like Belgium and France, will suffer all the devastation.

In plain English: If the Antivivisectionists and the Antivaccinationists and the various cults are going to attack the science of medicine and endanger the public health through the legislative halls of the state, medicine must carry the fight there first. Medicine must marshal political influence by political methods if legislative results are to be obtained—and legislative results *must* be obtained for the safety of the people. Medicine must put behind it its traditional reluctance to enter politics, not for its own advantage, but to protect the people from their own ignorance of conditions as they are.

The bathtub is now firmly established as necessary to health, but other prophylactic measures are still in need of defense. It is time that the members of the many scientific medical organizations awake to the fact that propaganda against scientific practice covers a wide territory and is powerfully organized, and that the propagandists will continue to work as long as there is an advantage to them in such work. Only by means of an organization of such strength and influence, backed up energetically by all the scientific physicians of the state, that a knock-out blow can be administered to the propagandists, can the question be settled once for all and physicians be free to return to their old ideals of ethics and professional service alone. But for the present duty and service must embrace the larger sphere of protecting society from the cranks, radicals, charlatans and self-seeking impostors.

Proper safeguarding laws must be made and agencies established to enforce them. To this end political control must be secured, and to do this every physician must lend his influence.

The past is gone. The future is not here yet. The only time to do anything is now. Let's get busy.

ANGINA PECTORIS

This so-called symptom complex that may be produced by a disturbance in the aorta, coronary arteries or myocardium, depending on whether one subscribes to the opinion of Allbutt, Osler or Mackenzie, is more or less an entity. It is brought to our attention at frequent intervals, sometimes by the death of one we have under observation or by the diagnosis being entirely overlooked until the end.

From different parts of the country at odd intervals come reports of successful resection of the cervical sympathetic and the thoracic ganglion. All of this has a tendency to focus attention on and to encourage observation of the syndrome.

While the condition is not classified as a disease the different phases merit closer study with the hope of preventing or controlling the major attacks. Most writers now agree that the term "false" or pseudo-angina is an unfortunate one and as it does not mean anything, should not be used. Referring to the attacks as major and minor, with the recognition of the atypical group which the French call *formes frustes*, is much more satisfactory. In the last named are seen the cases with some substernal distress and cardiac palpitation after exertion, which soon passes away. This atypical form, however, might well pass through the minor stage and on to a fatal termination in a major attack of angina pectoris.

In the presence of this well-known syndrome, characterized by a substernal pain extending often to the epigastrium and radiating down the arm to the fingers, the sense of impending dissolution and the pale, clammy skin, the probability of angina pectoris is quite evident. The fact that this state is almost always brought about by exertion or emotion must be considered. That not a few of these cases refer to the epigastrium as the seat of severe pain and ask relief for that condition, must not be forgotten. In the chest pains diagnosed as pleurodynia and muscular rheumatism, mild angina should be ruled out.

With the closer observation of the atypical and minor attacks and their proper management, the prognosis might be markedly improved.

A. J. S.

THE OFFICE LABORATORY OF THE PRACTICING PHYSICIAN

In recent years it has become a fact that when the resident physician has completed his service in any of our approved hospitals he is fairly competent to perform all manner of laboratory investigations. It is true that, during his laboratory service he has been obliged to spend the greater part of his time in carrying on the so-called "routine" work such as analyses of urine, blood counts, sputum examinations and microscopic examination of urethral, vaginal and other smears; but in so doing his time has not been wasted, since he will require more of such examinations than of any other when engaged in general practice.

In case he enters upon general practice he should by all means avail himself of his laboratory experience and equip his office with sufficient apparatus and reagents to perform at least the simplest and most needed laboratory tests.

The physicians of our larger cities, it is true, can have all varieties of laboratory examinations made by the various laboratories at their disposal. This has become one of the necessities of the times, for many practitioners are so busily engaged in practice that they do not have the opportunity to do laboratory work and are consequently unable to keep abreast of the times in technique.

The young practitioner, on the other hand, has the time and ability and he will find it a matter of economy to make use of his experience in this line.

The question arises as to just what work he should personally attempt to do and what he should turn over to the local laboratory. The greater his financial outlay the greater the variety of examinations he can perform. For example, if he possesses an incubator he may be able to do Widal reactions, throat and other cultures, prepare autogenous vaccines and so on, and if a high revolution electric centrifuge be added to his equipment he might make blood sugar estimations, Wassermann reactions, pneumonia typings, etc.

He will, however, have fewer examinations of this type than of the routine variety and the greater cost of the necessary apparatus for such work would not be justified by the return.

The following examinations he should be fully equipped to perform:

(1) Chemical analyses and microscopic examinations of urine.
(2) Erythrocyte, leucocyte and differential counts, hemoglobin estimations, color index, coagulation time, and blood smears for the primary anemias, malaria, etc.
(3) Sputum examinations for the tuberculosis bacillus; also Gram's stain.
(4) Chemical examination of gastric contents.
(5) Stool examination for occult blood and microscopic for pus, ova, etc.
(6) Microscopic examination of urethral and vaginal (or better, cervical, discharges for gonococci and other organisms (Gram's stain) as well as smears from the eye, ear, furnucles, etc.
(7) Lumbar puncture and examination of spinal fluid—cell counts, differential counts, globulin, colloidal gold curve and microscopic examination for pus, meningococci or other pyogenic organisms.
(8) Renal function test.
(9) Skin scrapings for fungi.
(10) Microscopic examination of bile from duodenal drainage for cholesterin crystals, epithelial cells, pus, blood, bacteria, etc.

The following apparatus will be sufficient to perform all of these examinations:

(1) Microscope with triple nose piece, Abbé condenser and three lenses, viz., 16 mm., 4 mm. and 1.9 mm., oil immersion.
(2) Hand centrifuge—two-piece head.
(3) Bunsen burner with two feet of rubber hose.
(4) Max Levy blood-counting chamber (Neubauer ruling), erythrocyte pipette and leucocyte pipette.
(5) Dare hemoglobinometer (or Tallqvist).
(6) Urinometer.
(7) Esbach albuminometer.
(8) Doremus-Hinds ureometer.
(9) Dunning colorimeter.
(10) Platinum or nichrome wire loop.
(11) Burette, 25 c.c., graduated in tenths, with burette stand (or a 10 c.c. pipette graduated in tenths—which serves for titrations as well as the burette).
(12) Wooden test tube rack—for 12 tubes.
(13) Duodenal tube.
(14) Two lumbar puncture needles.
(15) Fifty test tubes (20 c.c.).
(16) One doz. test tubes (3 c.c. for globulin test).
(17) Six centrifuge tubes 15 c.c., not graduated.
(18) One dozen dropping bottles 100 c.c.
(19) One hundred microscope slides.
(20) Coverslips (¾ inch square), ½ oz.
(21) Two wire coverslip forceps (Stewart)—for holding slides.
(22) One wire test tube holder (clamp).
(23) Three glass beakers, 2 oz. or 60 c.c.
(24) Two porcelain evaporating dishes—80 c.c.
(25) Two glass stirring rods—3-inch.
(26) Two glass funnels—2-inch.
(27) One pack filter paper—also used for blotting slides (120 sheets).
(28) One 1-liter glass graduate.
(29) Two 100 c.c. graduated cylinders.
(30) Two 1 c.c. pipettes graduated in tenths.
(31) One 5 c.c. pipette graduated in tenths.
(32) One 5 c.c. volumetric pipette.
(33) One 10 c.c. volumetric pipette.

The total cost of the above apparatus is less than $250, and may be reduced to about $210 by using the Tallqvist instead of the Dare hemoglobinometer and substituting a 10 c.c. graduated pipette for the burette and burette stand. This figure includes the microscope, which is more than half of the entire sum.

Certain refinements may be added to this outlay, such as a mechanical stage and dark field illuminator. With practice, however, a differential leucocyte count can be made without passing over the same field twice, even though a mechanical stage is not employed, so this instrument is not essential.

Many of the necessary reagents can be purchased from local drug stores. The solutions, such as indicators for gastric analysis, normal and decinormal solutions, colloidal gold solution and stains may be made up by the pathologist of the nearest hospital, who is usually willing to supply them to physicians at cost.

All reagents (a list of which will be found in the Department of "Selections" in this Journal), except colloidal gold solution, may be purchased from the various laboratory supply houses at a cost of about fifty dollars. G. R. M.

ARE YOU PREPARED?

The demand among the laity for preventive medicine is increasing. The people in general have accepted the principle of vaccination and inoculation against disease. The use of diphtheria toxin-antitoxin is becoming more and more popular. Every community demands pure water, sterile milk, extermination of harmful mosquitos, sanitary sewage disposal—in other words a locality safe to live in. People are getting educated to preventive medicine.

With this background of development for the last fifty years, small wonder is it that the periodic physical examination has taken hold of the popular imagination. It has taken very little argument to convince people that it is a good thing to have their bodily machinery gone over and put in order once a year. They were ready and indeed eager for the suggestion.

But is the physician ready to supply the demand? He is not. The average physician is not willing to take the time and trouble to make a thorough examination of the man or the woman who appears on the surface to be well. Some physicians—whisper it—do not even know how to make such examinations! It takes a certain amount of equipment that every practitioner should have, but that every practitioner does not have. It requires knowledge of a somewhat different type to determine whether a patient is in perfect health. Gross pathology is missing. Only the beginnings of disease may be present; and it requires a more delicate touch, better judgment, finer perceptions to detect and diagnose disease at this stage. Furthermore it requires a wide knowledge of the human body, wider than even the general practitioner frequently possesses.

The enlightened patient of to-day is not satisfied with a let-me-see-your-tongue, feel-your-pulse, are-you-constipated, here-are-some-pills kind of examination. He wants a careful going-over from his head to his toes, and if the doctor misses anything that he should have seen, woe be to the doctor.

A great deal is said about educating the laity to things medical; but our theme is the education of the doctor to supply this demand. If he is not equal to the opportunity, someone else will be. Why, then, wait for the development of another specialty? Why rant about the extinction of the general practitioner, when one of the biggest developments of medical science is now put up to him? If he is equal to the demand there is still hope of keeping him in his position of eminence. If he is not he may as well bid his opportunity farewell.

How many county societies have held health examination clinics? How many have discussed the question of the health examination? How many have taken cognizance of the fact that the State Society has issued Periodic Examination Records to help the physician make these examinations and keep systematic records of them?

May not each county society take up this subject, and if desired by its members, devote a meeting to educating the doctor in this latest development of public health—the periodic physical examination?

THE MENTAL PATIENT

The mental patient in the field has always been a rather trying problem to the general practitioner. In the past, except when the case was one of delirium associated with some somatic disease, this problem was met by an immediate commitment to a mental hospital. To say that such a procedure should continue to prevail may be seriously questioned. Within recent years, particularly since the war emphasized the high prevalence of potential mental cases and the early recognition and treatment of these cases, there has been a decided change of viewpoint in meeting this problem. Available psychiatric wards and mental clinics in the field are also responsible for this healthful change.

Regardless of these advances, however, there are still those who are rather reluctant in breaking away from the plan of immediate hospitalization. These physicians base their justification on possible suicidal, homicidal, violent and incendiary tendencies, which of course cannot be overlooked. However, in the last analysis, this type of patient represents only a definite percentage of cases met in the field and there remains a large group of mental patients in which a different line of procedure is justifiable.

For this latter group, a procedure of extramural care must be outlined and followed. Such an outline should include such an environment as will permit of proper care, study, diagnosis and prognosis of the disease from which the patient is suffering. During this period of observation and treatment, the general practitioner is well fortified with definitely known remedial procedures to combat and treat the disease. Such remedies as elimination, baths, hot packs, with an occasional resort to sedative drugs, will enable the general practitioner to study his patient sufficiently long to determine whether recovery in the field is possible, or if final hospitalization is necessary.

The general hospital also offers an intermediate station between the patient in the field and the mental hospital, and the barriers of prejudice formerly held by the general hospital towards mental diseases will soon be brushed aside by medical progress and community opinion. It is a pleasure to note the available beds being set aside in some general hospitals for observation and treatment of cases showing early manifestations of mental disorders. J. A. J.

THE TREATMENT OF OCULAR INFECTIONS BY PROTEINS OR NON-SPECIFIC AGENTS

Hypopyon-keratitis,serpiginous ulceration, infections following penetrating wounds of the anterior segment of the eyeball and panophthalmitis, as well as other ocular infections of more obscure origin, have formed one of the most difficult and annoying group of eye conditions with which those called upon to treat ocular disease have had to contend. The therapy employed has been more or less empirical and no remedy has been found that acts specifically in such affections. During the past four or five years many proteins or nonspecific substances, including various serums, vaccines, proteoses, yeast, hypertonic salt solution and milk injections have been receiving close attention as therapeutic agents in different ocular infections by both European and American ophthalmic clinicians. Following this line of research, while the vast amount of clinical observations have not always harmonized and different theories have been advanced as to the constitutional reaction upon the patient and the manner in which this reaction takes place, yet enough has been obtained by intensive experimentation and tabulation of results to justify a logical belief that a definite and valuable aid has been found in the treatment of these ocular infections.

Dr. Ben Witt Key, of New York, who is especially well qualified and who has been a pioneer among American ophthalmologists in this particular line of investigation, will be a guest of the State Medical Society at the Reading meeting in October and will present a paper before the Section on Eye, Ear, Nose and Throat Diseases dealing comprehensively with this interesting subject. G. E. C.

THE NURSING MOTHER

The decadence of lactation has progressed to such an extent that among some classes of our complex modern society it is the rare exception to find the mother who can nurse her baby even a reasonable time. All of this is deplorable. How much of it is due to our increasing ability to prepare appropriate artificial food for bottle-fed infants? In former ages these babies perished, and the race depended upon good nursing mothers for its continuance. Complete cessation of lactation, though possible in the very distant future, is not at all probable soon.

Cow's milk now can be so modified as to be better suited to certain infants than the milk supplied by a feeble mother; yet we are so far from being able to imitate human milk exactly that the infant which has proper breast nourishment for a few months, stands far greater chance of survival than one which receives it for a few weeks only, and the babies raised on bottles from birth suffer a percentage of mortality, even with the greatest care. A certain period of lactation, therefore, is still necessary, and the more it can be prolonged, the better is the infant's chance of survival, even though we can shorten the period with far greater safety than a century ago. A perfect artificial food for infants will not be possible until the chemists have discovered the exact composition of the proteids of human milk, and are able to make them synthetically.

The ethical aspects of the decadence of lactation are of considerable importance. The decadence of wet nursing, through skill in infant feeding is a distinct gain. It would be justifiable to devote public funds to the investigation of proteids and their manufacture, to the end of improving the race by the artificial feeding of infants which now perish. F. C. H.

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

OFFICERS' DEPARTMENT

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MEDICAL DEFENSE

The Committee of Council of our Society has recently accepted for defense a suit for alleged malpractice against one of our members in which the plaintiff holds the operating surgeon responsible for a burn received from a hot water bottle placed by a nurse who was chosen by the patient and on the case before the patient was taken to the hospital.

We mention this detail because it illustrates the broad responsibility placed upon a physician when he accepts a patient for treatment; also, because we hope it will stimulate to quick action those of our 1923 members who have permitted their medical defense protection to lapse by failure to pay their 1924 dues.

1924 HONOR ROLL

On March 31, 1924, 48 of our 63 component county medical societies had remitted to the office of the Secretary of the State Society the current year's assessment for at least 90% of their 1923 membership. This record excels the records of all the previous years and speaks volumes for the energetic effort by the Secretary of each of the various societies. Total membership, April 16, 1924, was 7,017; same date, 1923, 6,893; same date, 1922, 6,784; same date, 1921, 6,833; same date, 1920, 6,459. The following counties had 90% or more of their 1923 membership paid on March 31, 1924:

Wyoming, 100%; Juniata, 100%; Montour, 100%; Bradford, 100%; Sullivan, 100%; Union, 100%; Carbon, 100%; Clarion, 100%; Clinton, 100%; Perry, 100%; Tioga, 100%; Wayne, 100%; Lycoming, 99%; Berks, 98%; Crawford, 98%; Warren, 98%; Allegheny, 97%; Bucks, 97%; Lebanon, 97%; York, 97%; Adams, 96%; Armstrong, 96%; Erie, 96%; Fayette, 96%; Cambria, 95%; Indiana, 95%; Lancaster, 95%; Mercer, 95%; Susquehanna, 95%; Blair, 94%; Clearfield, 94%; Delaware, 94%; Franklin, 94%; Luzerne, 94%; Schuylkill, 94%; Butler, 93%; Columbia, 93%; Greene, 93%; Northampton, 93%; Northumberland, 93%; Washington, 93%; Center, 92%; Elk, 92%; Mifflin, 92%; Lawrence, 91%; Lehigh, 90%; McKean, 90%; Philadelphia, 90%.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to April 19th:

Allegheny: *New Members*—Charles T. Francis, 7220 Idlewild St.; Joseph H. Carroll, Mercy Hospital; Chester C. Houck, 672 Washington Road; Max R. Goldman, 1906 Fifth Ave.; Jacob Rockman, 2111 Carson St., Pittsburgh; Emmett Davis, Library; Florentine B. Jones, Carnegie; George E. McKenzie, 722 Penn Ave., Wilkinsburg. *Transfer*—Frederick K. Booth, 419 E. Sixth St., Tarentum, from Clarion County Society. *Deaths*—Tucker L. Randolph of Pittsburgh (Jeff. Med. Coll., '16), from pneumonia, March 18, aged 32; William W. Jones of Northeast (Univ. of Penna., '78), from paralysis agitans, March 19, aged 72; Isador K. Gardner of Pittsburgh (Univ. of Pgh., '21). *Resignations*—Stephen A. Dawson, formerly of Pittsburgh; Susan Offutt, of Pittsburgh.

Beaver: *Transfer*—Ruth P. Walker, Monaca, formerly of Pittsburgh, from Allegheny County Society.

Bedford: *New Member*—John E. Miller, Osterburg.

Berks: *New Member*—Owen J. McGovern, 208 S. Fifth St., Reading.

Bucks: *Resignation*—William J. Wilkinson, New Holland. *Removal*—Samuel Stoumen from Springtown to So. Bethlehem.

Chester: *New Member*—Admiral William C. Braisted, West Chester.

Clarion: *Resignation*—Joseph Aaronoff, Wilmington, Del.

Cumberland: *New Member*—William B. Stuart, Carlisle.

Dauphin: *Death*—Grace Wintersteen, of Harrisburg (Woman's Med. Coll., Phila., '93), April 3, aged 60.

Erie: *New Member*—Jessmond W. Schilling, 1818 Chestnut St., Erie.

Fayette: *New Member*—Edwin B. Guie, Dunbar.

Indiana: *Resignation*—Leroy Coolidge, formerly of Clymer, now of Washington, D. C. *Removal*—*Joseph* S. Wilson from Marion Center to Meadow Lands (Wash. Co.).

Jefferson: *New Member*—A. F. McCormick, Falls Creek.

Lackawanna: *New Member*—J. F. Comerford, 708 Pittston Ave., Scranton.

Lancaster: *Death*—Park P. Brenneman, of Lancaster (Univ. of Penna., '84), March 22, aged 64.

Lebanon: *Death*—Charles M. Strickler, of Lebanon.

Lehigh: *Resignation*—Annie E. Freese, of Allentown. *Removal*—Clarence F. Ruloff from Allentown to Pitcairn (Alleg. Co.).

Luzerne: *New Member*—Joseph A. Alexis, Hazleton. *Death*—Ruth M. Lance, of Kingston (Cornell Univ. Med. Coll., '10), recently, aged 41. *Suspended indefinitely*—Raymond C. Creasy, Wilkes-Barre.

Lycoming: *Resignation*—Leon J. Camche, Newark, N. J.; Omer R. Etter, Oakland, Calif. *Death*—Horace G. McCormick, of Williamsport (Jeff. Med. Coll., '74), March 28, after a long illness, aged 74.

Montgomery: *New Members*—Joseph E. Sands, Bryn Mawr; Samuel T. Nicholson, Hill School, Pottstown.

Mifflin: *Death*—Silas M. Hazlett, of Allensville (Jeff. Med. Coll., '97), March 9, aged 53.

Northampton: *Death*—John A. Lentz, San Francisco, Calif.

Northumberland: *Death*—James M. Maurer, of Shamokin (Univ. of Penna., '87), March 11, aged 62.

Philadelphia: *New Members*—James L. Martin, 747 So. Fifteenth St.; Frank S. Orland, 738 Snyder Ave.; Martin J. Costello, 2507 So. Garnet St.; Anthony S. Giordano, 1734 N. Fifty-ninth St.; Joseph C. Kahan, 1520 N. Seventh St.; Maude E. Abbott, 1300 Spruce St.; Paul A. Bishop, 4521 N. Broad St.; M. J. Levin, Eighth and Snyder Aves.; Abraham J. Brown, 1804 N. Franklin St.; Albert A. Lucine, 2048 N. Eleventh St.; Nathaniel G. Shafritz,, 143 E. Allegheny Ave.; Louis M. Jacob, 1532 So. Fifth St.; Mary A. Hipple, 2144 St. James Place; D. Franklin Kline, 1426 N. Fifteenth St.; John S. Scouller, 1900 E. Westmoreland St., Philadelphia. *Reinstated Member*—Edward J. Murphy, 1429 W. Erie Ave., Philadelphia. *Resignation*—Harry S. Fist of Los Angeles, Calif., formerly of Philadelphia; W. M. L. Coplin, Atlantic City., N. J., formerly of Philadelphia; William G. Ramsey, Philadelphia; A. Graeme Mitchell, Philadelphia. *Deaths*—Belle A. Schisler, of Philadelphia (Woman's Med. Coll., '01), Feb. 27, aged 50; Josephine W. Hildrup, of Brookline, Mass., Feb. 19; Frederick Carrier, of Philadelphia (Jeff. Med. Coll., '78), Jan. 10; Thomas J. Byrne, of Philadelphia (Univ. of Penna., '99), March 4; Albert P. Francine, of Philadelphia (Univ. of Penna., '98), aged 45; Edmund L. Graf, of Philadelphia (Univ. of Penna., '00), aged 47.

Schuylkill: *Transfer*—Peter B. Mulligan, Ashland, from Dauphin County Society.

Venango: *Resignation*—Irwin H. Boyd, Clayton, Del. *Removal*—Walter R. Livingston from Polk to Glenville (York Co.).

Warren: *New Member*—R. F. Otterbein, Warren.

Westmoreland: *Death*—Wesley W. Miller (Univ. of Pgh., '92), suddenly, Aug. 25, aged 57.

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since March 19th. Figures in first column indicate county society numbers; second column, State Society numbers:

1923				
Mar. 22	Philadelphia	1992	7345	$5.00
1924				
Mar. 20	Lancaster	61–67	4941–4947	35.00
	Washington	109	4948	5.00
	Lawrence	46	4949	5.00
	Dauphin	121–123	4950–4952	15.00
	Clearfield	64–65	4953–4954	10.00
	Wayne	22–24	4955–4957	15.00
	York	97–99	4958–4960	15.00
Mar. 20	Allegheny	786–1058	4961–5233	1,365.00
21	Dauphin	124	5234	5.00
	Franklin	39–42	5235–5238	20.00
	Bucks	61–66	5239–5244	30.00
	York	100–101	5245–5246	10.00
	Fayette	103–106	5247–5250	20.00
22	Delaware	87	5251	5.00
	Philadelphia	1110–1359	5252–5501	1,250.00
	Philadelphia	1360–1383	5502–5525	120.00
	Northampton	89–113	5526–5550	125.00
	Fayette	107–111	5551–5555	25.00
	Lancaster	68–80	5556–5568	65.00
	Carbon	25	5569	5.00
	Mercer	64	5570	5.00
	Bedford	13–14	5571–5572	10.00
	Lackawanna	147–159	5573–5585	65.00
22	Crawford	8–21	5586–5599	70.00
	Somerset	26–29	5600–5603	20.00
23	Tioga	1–22	5604–5625	110.00
	York	102–103	5626–5627	10.00
	Carbon	26	5628	5.00
	Mercer	65	5629	5.00
	Venango	37–38	5630–5631	10.00
	Cambria	117–124	5632–5639	40.00
25	Franklin	43–46	5640–5643	20.00
	Northumberland	47–51	5644–5648	25.00
	Dauphin	125–127	5649–5651	15.00
	Schuylkill	106–116	5652–5662	55.00
	Northampton	114–121	5663–5670	40.00
	York	104–106	5671–5673	15.00
	Lehigh	58–87	5674–5703	150.00
	Delaware	88	5704	5.00
	Lancaster	81–94	5705–5718	70.00
26	Westmoreland	94–111	5719–5736	90.00
	Lackawanna	160–167	5737–5744	40.00
	Erie	105–125	5745–5765	105.00
	Luzerne	186--218	5766–5798	165.00
	Venango	39–40	5799–5800	10.00
	Montgomery	130–137	5801–5808	40.00
	Cumberland	24	5809	5.00
	Lancaster	95–106	5810–5821	60.00
	Susquehanna	1–16	5822–5837	80.00
	Franklin	47–48	5838–5839	10.00
	Butler	36–40	5840–5844	25.00
	Wayne	25	5845	5.00
	Dauphin	128–129	5846–5847	10.00
	Cambria	125–128	5848–5851	20.00
26	Philadelphia	1384–1617	5852–6085	1,170.00
27	Delaware	89	6086	5.00
	Butler	41–42	6087–6088	10.00
	Franklin	49	6089	5.00
	Elk	22–23	6090–6091	10.00
	Somerset	30–32	6092–6094	15.00
	York	107–109	6095–6097	15 00
	Erie	126–127	6098–6099	10.00
	Cumberland	25	6100	5.00
28	Butler	43–48	6101–6106	30.00
	Lancaster	107–119	6107–6119	65.00
	Venango	41–42	6120–6121	10.00
	Dauphin	130	6122	5.00
	Tioga	24–27	6123–6126	20.00
	Washington	110–113	6127–6130	20.00
	Dauphin	72–85	6131–6144	70.00
	Crawford	22–35	6145–6158	70.00
29	Fayette	112–117	6159–6164	30.00
	Cambria	129	6165	5.00
	Somerset	33	6166	5.00
	Butler	49–50	6167–6168	10.00
	Erie	128–129	6169–6170	10.00
	Huntingdon	32–33	6171–6172	10.00
	Beaver	54–57	6173–6176	20.00
	Venango	43	6177	5.00
	Lebanon	29–35	6178–6184	35.00
	York	110–117	6185–6192	40.00
	Franklin	50	6193	5.00
	Fayette	119–120	6194–6195	10.00
31	Montgomery	138–139	6196–6197	10.00
	Dauphin	131	6198	5.00
	Beaver	58–59	6199–6200	10.00

Mar. 31	Lackawanna	168–180	6201–6213	65.00
	Bucks	67–71	6214–6218	25.00
	Tioga	28–29	6219–6220	10.00
	Westmoreland	113–125	6221–6233	65.00
	Chester	46–64	6234–6252	95.00
	Armstrong	46–52	6253–6259	35.00
Apr. 1	Huntingdon	34	6260	5.00
	Bucks	72–73	6261–6262	10.00
	Washington	114	6263	5.00
	Venango	44	6264	5.00
	Dauphin	132–133	6265–6266	10.00
	Lawrence	47–54	6267–6274	40.00
	Butler	51	6275	5.00
	Lancaster	120	6276	5.00
	Westmoreland	112	6277	5.00
	Luzerne	219–233	6278–6292	75.00
	Cambria	130	6293	5.00
	Indiana	49–58	6294–6303	50.00
	Berks	106–132	6304–6330	135.00
	Warren	1–48	6331–6378	240.00
	Tioga	30–31	6379–6380	10.00
2	Cumberland	26	6381	5.00
	Venango	45	6382	5.00
	Lancaster	121	6383	5.00
	Schuylkill	117–126	6384–6393	50.00
	Armstrong	53	6394	5.00
	Dauphin	134–135	6395–6396	10.00
	Cambria	131	6397	5.00
	Crawford	36–48	6398–6410	65.00
2	Philadelphia	1618–1783	6411–6576	830.00
	Northumberland	52–56	6577–6581	25.00
	Somerset	34–35	6582–6583	10.00
3	Carbon	27	6584	5.00
	Beaver	60–63	6585–6588	20.00
	Northampton	122–130	6589–6597	45.00
	Huntingdon	35–36	6598–6599	10.00
	Blair	86	6600	5.00
4	Erie	130–135	6601–6606	30.00
	Mercer	66	6607	5.00
	Chester	65–66	6608–6609	10.00
	Cambria	132	6610	5.00
	Indiana	59–61	6611–6613	15.00
	Butler	52	6614	5.00
	Perry	15	6615	5.00
	Westmoreland	126–132	6616–6622	35.00
	Dauphin	136–137	6623–6624	10.00
5	Clearfield	66	6625	5.00
	Cumberland	27	6626	5.00
	Mifflin	24	6627	5.00
	Columbia	36–39	6628–6631	20.00
	Bucks	74	6632	5.00
	Dauphin	138–141	6633–6636	20.00
	Washington	115	6637	5.00
	Armstrong	54	6638	5.00
7	Lackawanna	181–192	6639–6650	60.00
	Fayette	121–124	6651–6654	20.00
	Lawrence	55	6655	5.00
	Chester	67–68	6656–6657	10.00
	Westmoreland	133–135	6658–6660	15.00
	Potter	13	6661	5.00
7	Bedford	15	6662	5.00
	Dauphin	142–143	6663–6664	10.00
	Huntingdon	37	6665	5.00
	Delaware	90	6666	5.00
	Montgomery	140–143	6667–6670	20.00
	Luzerne	234–240	6671–6677	35.00
	Venango	46	6678	5.00
8	Fayette	125	6679	5.00
	Blair	87	6680	5.00
9	Venango	47	6681	5.00
	Luzerne	241	6682	5.00
	Center	24	6683	5.00
	Somerset	36–41	6684–6689	30.00
	Lehigh	88–95	6690–6697	40.00
	Cumberland	28–30	6698–6700	15.00
	Dauphin	144	6701	5.00
	Huntingdon	38	6702	5.00
10	Berks	133	6703	5.00
	Venango	48	6704	5.00
Apr. 10	Washington	116	6705	5.00
	Beaver	64	6706	5.00
	Mifflin	25	6707	5.00
	Dauphin	145	6708	5.00
11	Lawrence	56	6709	5.00
	Franklin	51	6710	5.00
	Somerset	42–43	6711–6712	10.00
	Dauphin	146	6713	5.00
12	Luzerne	242	6714	5.00
	Delaware	91	6715	5.00
	Beaver	65	6716	5.00
	Westmoreland	136–138	6717–6719	15.00
12	Armstrong	55	6720	5.00
	Allegheny	1059–1228 1230	6721–6891	855.00
14	McKean	38	6892	5.00
	Lackawanna	193–204	6893–6904	60.00
15	Lehigh	96–103	6905–6912	40.00
	Luzerne	243	6913	5.00
	Cumberland	31–32	6914–6915	10.00
	Chester	69	6916	5.00

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230 State St., Harrisburg, Pa.

THE LAY PRESS

Few of us give due credit to the newspapers and literary magazines for the interest manifested relating to the practice of the healing art. It was quite a general custom in former years to poke fun at the medical doctor for his errors and habits. Of late this has ceased to a great extent and many of the better journals, as well as newspapers, have taken sides with the medical profession in the endeavor to elevate the practice of medicine and show up in its true light irregular practice of treating the sick.

Preventive medicine has also received prominent notice from time to time so that the public is taking notice of this change and is becoming interested in better medical treatment of the sick, as well as following advice as to how to keep well.

We wish especially to call the attention of the readers of The Atlantic Medical Journal to a series of articles that have appeared in *Collier's National Weekly*. The first of these articles by Harry T. Brundidge under the title of "How I Became 'Dr. Thompson,'" appeared in the April 5th number of *Collier's*. In this article he gave an interesting description of his experience with the "fake diploma mill" and the people who were at the head of this mill. This article is interesting as well as instructive, as it discloses the methods by which bogus diplomas have been obtained as brought out by the official investigation in Connecticut and other states.

The April 12th number contained the article "Grist for the 'Sucker Machine.'" This article gives a description of a fake electrical machine used to make a diagnosis (?) and the information as to how to become a "specialist." It discloses the method of fraud operated for some time by many irregular practitioners and used greatly to impress the patient.

The third article under title of "Rid the Country of Quacks" appeared in the April 19th number of *Collier's*. A description of the method of issuing fake certificates and diplomas is given in graphic style. In closing this article Mr. Brundidge says:

> "There are at the present time ninety-six separate and independent boards of examiners in the forty-eight states. One can readily believe that in such confusion the public interests have been largely disregarded.
>
> "Everyone who treats human disease or injury by special method or system should have a thorough training in the fundamental medical sciences so that he may know not only when to use the particular method in which he is specializing, but also when that method should not be used. The wrong use of the remedial agent in the treatment of a patient may be more disastrous than if such treatment is not used. The omission of the right treatment may indeed have serious results; a wrong treatment may result in the death of the patient.
>
> "Before any person can assume to care for the sick or injured, he should be forced by law to:
>
> "Complete a high-school course of four years.
>
> "Take a two-year course in a college of liberal arts specializing in chemistry, physics, and biology.
>
> "Finish a four-year course at a medical college.
>
> "Serve as an interne in a hospital for one year.
>
> "One educational standard should be established for all who practice the healing art, regardless of the treatment advocated. Require everyone who wishes to practice to prove that he possesses the proper education and training, and then grant him a license as a physician and let him use any method which his common sense may indicate.
>
> "Granted that there is good in all forms of healing, that good will in no way be diminished if those employing such methods are first required to obtain a thorough training in the fundamental sciences.
>
> As I said in the opening paragraph, the national medical diploma-mill ring—and there is only one big organization—has been shorn of its sinister power.
>
> "But the big work, the important constructive work, lies ahead, and it must be done if the mill is to be put out of business permanently and the organization of other mills prevented."

We would suggest that every medical practitioner interested in higher education and the suppression of the quack and irregular practitioner obtain copies of these three issues of *Collier's* and read them.

Dr. O. Pine queries: Anent the fake diploma scandal, are those victimized still rushing to the "bonesetter" and fake theorist, or are they really worrying about whether or not the new man they choose to consult is a properly qualified doctor of medicine?

Dr. O. Pine queries: Would it not be a remarkably progressive step, if Congress and the Chief Executive could give as much attention to the fake medical diploma scandal as to the oil scandal? How long is it going to be before crimes against health will receive at least as much attention as offences against wealth?

AMERICAN MEDICAL ASSOCIATION NEWS

THE CHICAGO SESSION

Fellows Should Have Pocket Cards for Registration

All Fellows who will attend the Seventy-Fifth Annual Session at Chicago, June 9-13, are urged to bring with them their 1924 Fellowship cards. These cards are necessary for prompt registration. Any one who has not received his 1924 Fellowship card should write for it at once.

Banquet for Section on Diseases of Children

Dr. E. J. Huenekens, secretary of the Section on Diseases of Children, announces that the annual banquet for that section will be held at the Congress Hotel, Chicago, Thursday, June 12th.

The Woman's Auxiliary of the American Medical Association

The second annual meeting of the Woman's Auxiliary of the American Medical Association will be held in Chicago, June 10th-13th. All meetings will be held at the Edgewater Beach Hotel. The executive board will meet at 9 a. m., Tuesday, June 10th. All national officers and the presidents of state auxiliaries compose the executive board of the Woman's Auxiliary. Wednesday evening, June 11th, at 7 o'clock, there will be a subscription dinner. Visiting and local women are invited to register for this dinner. The general meeting will be held Thursday, June 12th, at 9 a.m., at which time the reports from the state auxiliaries will be heard and the election of officers will be held. The wives of all members in good standing in the American Medical Association are eligible to membership in the Woman's Auxiliary, and are invited to affiliate. Mrs. S. C. Red, 817 Caroline Street, Houston, Texas, is president.—*Jour. A. M. A.*, April 26, 1924.

HOTEL ACCOMMODATIONS FOR THE READING SESSION, OCTOBER 6-9, 1924

The city of Reading is particularly well situated for the holding of conventions. In recent years many conventions of such organizations as the Rotarians, Kiwanians, and Shriners, have been held there. The hotel facilities have proved adequate and it is believed that sufficient accommodations will be available for all the doctors during the meeting in October. The list of the hotels and their rates is appended.

In the mountains at Wernersville, which is about seven miles distant from Reading, are located Galen Hall, Grand View Sanatorium, and South Mountain Manor. Those physicians who will motor to the convention in Reading will find these hotels particularly delightful because the road between Wernersville and Reading is excellent and the hotel accommodations are first class. The mountains at Wernersville are very attractive and have for years been very widely known as health resorts. It is hardly necessary to add that accommodations should be booked at these hotels as early as possible so that desirable reservations may be secured.

The following hotels are centrally located in the city of Reading:

Berkshire, 276 rooms, European plan. With private bath: single rooms, $3.50 to $5.00; double rooms, $5.00 to $8.00; with twin beds, $7.00 to $8.00. Without private bath: single rooms, $2.50 to $3.00; double rooms, $4.00 to $5.00; with twin beds, $5.50.

Mansion, 90 rooms, European plan. With private bath: single rooms, $3.00 to $3.50; double rooms, $6.00 to $7.00. Without private bath: single rooms, $2.00 to $2.50; double rooms, $4.00 to $5.00.

American, 110 rooms, American plan. With private bath: double rooms, $5.50. Without private bath: double rooms, $4.50.

Penn, 125 rooms, European plan. With private bath: single rooms, $2.50 to $3.00; double rooms, $4.00 to $5.00. Without private bath: single rooms, $1.50 to $2.00; double rooms, $2.50 to $3.00.

Tourists, 75 rooms, European plan. Without private bath, but with running water: single rooms, $1.50; double rooms, $2.50. Without running water: single rooms, $1.25; double rooms, $2.00. With running water: 4 in room —2 beds—$4.00.

Belmont (men only). With private bath: single rooms, $3.00; double rooms, $5.00. Without private bath: single rooms, $2.00; double rooms, $3.50.

Merchants, 50 rooms, American plan. Price, $3.00 to $3.75.

The following hotels are located at Wernersville, in the mountains about 7 miles from Reading, and connected with the city by an excellent road:

Grand View, American plan. Price, $5.00.

Galen Hall, American plan. Price, $7.00 to $10.00.

South Mountain Manor, American Plan. See advertisement on page iv of this issue for illustration and description. With private bath: single rooms, $8.00, $9.00, $10.00. Without bath but with running hot and cold water: $6.00, $7.00, $8.00.

The Berkshire, Reading, Pa.

Mansion House, Reading, Pa.

Galen Hall,
Wernersville, Pa.

Grandview,
Wernersville, Pa.

COUNTY MEDICAL SOCIETIES

REPORTERS OF COUNTY SOCIETIES

Adams—James P. Dalhey, M.D., Gettysburg.
Allegheny—Lester Hollander, M.D., Pittsburgh.
Armstrong—Jay B. F. Wyant, M.D., Kittanning.
Beaver—Francis H. McCaskey, M.D., Rochester.
Bedford—N. A. Timmons, M.D., Bedford.
Berks—Clara Shetter-Keiser, M.D., Reading.
Blair—James S. Taylor, M.D., Altoona.
Bradford—Stanley D. Conklin, M.D., Sayre.
Bucks—Anthony F. Myers, M.D., Blooming Glen.
Butler—L. Leo Doane, M.D., Butler.
Cambria—Joseph J. Meyer, M.D., Johnstown.
Carbon—Jacob A. Trexler, M.D., Lehighton.
Center—James L. Seihert, M.D., Bellefonte.
Chester—Henry Pleasants, Jr., M.D., West Chester.
Clarion—H. A. Wick, M.D., New Bethlehem.
Clearfield—W. E. Reiley, M.D., Clearfield.
Clinton—Clair B. Kirk, M.D., Mill Hall.
Columbia—C. B. Yost, M.D., Bloomsburg.
Crawford—Cornelius C. Laffer, M.D., Meadville.
Cumberland—Calvin R. Rickenhaugh, M.D., Carlisle.
Dauphin—W. Minster Kunkel, M.D., Harrisburg.
Delaware—George L. Armitage, M.D., Chester.
Elk—Joseph E. Madara, M.D., St. Marys.
Erie—Anna M. Schrade, M.D., Erie.
Fayette—Hugh Ralston, M.D., Uniontown.
Franklin—Samuel D. Shull, M.D., Chambersburg.
Greene—Thomas B. Hill, M D., Waynesburg.
Huntingdon—John M. Keichline, Jr., M.D., Huntingdon.
Indiana—H. Boydston Smith, M.D., Blairsville.
Jefferson—W. A. Hill, M.D., Reynoldsville.
Juniata—W. H. Banks, M.D., Mifflintown.
Lackawanna—G. A. Clark, M.D., Scranton.
Lancaster—J. Sullivan, M.D., Lancaster.
Lawrence—William A. Womer, M.D., New Castle.
Lebanon—W. Horace Means, M.D., Lebanon.
Lehigh—Harold E. Hersh, M.D., Allentown.
Luzerne—H Irvin Evans, M.D., Ashley.
Lycoming—Wesley F. Kunkle, M.D., Williamsport.
McKean—Francis DeCaria, M.D., Bradford.
Mercer—M. Edith MacBride, M.D., Sharon.
Mifflin—F. A. Rupp, M.D., Lewistown.
Monroe—Charles S. Flagler, M.D., Stroudsburg.
Montgomery—John C. Simpson, M.D., Norristown.
Montour—John H. Sandel, M.D, Danville.
Northampton—Wm. A. Finady, M.D., Bethlehem.
Northumberland—Charles H. Swenk, M.D., Sunbury.
Perry—A. R. Johnson, M.D., New Bloomfield.
Philadelphia—Franklin M. Crispin, Philadelphia.
Potter—Ross H. Jones, M.D., Coudersport.
Schuylkill—Arthur B. Fleming, M.D., Tamaqua.
Snyder—John O. Wagner, M.D., Beaver Springs.
Somerset—H. Clay McKinley, M.D., Meyersdale.
Sullivan—P. G. Biddle, M.D., Dushore.
Susquehanna—Robert B. Mackey, M.D., Montrose.
Tioga—H. A. Voshurg, M.D., Arnot.
Union—Oliver W. H. Glover, M.D., Laurelton.
Venango—John F. Davis, M.D., Oil City.
Warren—M. V. Ball, M.D., Warren.
Washington—Charles C. Cracraft, M.D., Claysville.
Wayne—Hugh Stevenson, III, M.D., Honesdale.
Westmoreland—D. Allison Walker, M.D., South West.
Wyoming—Herbert L. McKown, M.D., Tunkhannock.
York—Maurice C. Wentz, M.D., York.

May, 1924

COUNTY SOCIETY REPORTS

ALLEGHENY—APRIL

The regular scientific meeting of the Allegheny County Medical Society was held in the Chamber of Commerce Auditorium, Tuesday, March 18, 1924.

The meeting was called to order by the President, Dr. Ernest W. Willetts, at 8:40 p.m.

Attendance: 126.

Dr. T. W. Grayson reported the following deaths for the Necrology Committee: Dr. Herman W. Heckelman, Dr. Wm. Stewart Ramsey, Dr. Robert Washington Clark, Dr. David Richard Evans, Dr. Moore Stockton McKennan, Dr. Wm. K. T. Sahm, and Dr. George Elmer Bair.

Dr. Walter F. Donaldson read the report of the Nominating Committee for Delegates and Alternates to the Medical Society of the State of Pennsylvania.

Dr. Carl E. McKee's paper, entitled "Eye Conditions in Children Under Six Years of Age; Our Responsibility as Physicians," was discussed by Doctors E. B. Heckel, H. A. Miller, H. M. Hall and Dr. McKee in closing.

Dr. A. H. Colwell's paper entitled "Heart Disease in Relation to Industrial Employment" was discussed by Drs. J. H. Heard, J. L. Foster, H. M. Hall, J. H. Hoffman, and Dr. Colwell in closing.

Dr. J. A. Hagemann presented his paper, "The Doctor's Library." Leigh Hunt and DeQuincey's description of room used as a library is particularly felicitous. He referred to small medical libraries of Paracelsus and Dr. John Radcliffe; large libraries of the late Dr. J. Solis Cohen, Dr. Ashhurst, Dr. George McClellan, and others; expediency of medical men having working library germane to their work; large collection of biographies and histories of American medical pioneers from which to select, such as William Beaumont, Ephraim McDowell, Peter Smith and Dr. Daniel Drake, the latter having published a book that was highly commended at the meeting of the American Medical Association, in 1850. Among poetical works those of Dr. John Armstrong, Dr. Mark Akenside, James Whitcomb Riley and Will Carleton deserve special mention. Francois Rabelais was a prominent writer of prose literature and eminent in medicine. Chief gratification to medical bibliophile in collecting books upon medical history, thus assembling records of the fruits of originality and enterprise exhibited by medical pioneers. The Surgeon-General's Office at Washington and the Library of the College of Physicians, of Philadelphia, contain the greatest collection of incunabula in the world. There are opportunities for odd adventures in collecting of books, encountering eccentric dealers and making rare finds in singular places. This paper was discussed by Drs. E. B. Heckel, Theodore Diller, C. C. Mechling, H. M. Hall, H. P. Ashe, and Dr. Hagemann in closing.

Dr. E. B. Heckel opened discussion: "It is my appointed task, my honorable privilege, this evening, to speak of what has been done by others. No one can bring his tribute of words into the presence of great deeds, or try with them to embellish the memory of any inspiring achievement, without feeling and leaving with others a sense of their insufficiency. So felt Alexander when he compared even his adored Homer with the hero the poet had sung. So felt Webster when he contrasted the phrases of rhetoric with the eloquence of patriotism and of self-devotion. So felt Lincoln when on the field of Gettysburg he spoke those immortal words which Pericles could not have bettered, which Aristotle could not have criticized. So felt he who wrote the epitaph of the builder of the dome which looks down on the crosses and weathercocks that glitter over London. So spoke Oliver Wendell Holmes in his dedicatory address at the opening of the Medical Library in Boston, December 3, 1878. It is rather interesting to go into the by-ways at times and Dr. Hagemann is deserving of the thanks of this Society for leading the way to the Doctor's Library. The Doctor's Library serves two distinct functions, first as a place of reference and record, as a place where one can browse as it were, where the inspection of one shelf leads us to another, where some unthought-of field of information serves as an inspiration to another, where forgotten facts may prove to be the fertile soil of new thoughts. Next to actually knowing a thing is to know where to look for it, so that the cultivation of this habit is of immense value; for example, some time ago the oft quoted 'God tempers the wind to the shorn lamb' came up for discussion, and some one ventured that it was from the Bible, another that Shakespeare was the author—and when the speaker said 'No, it is from Sterne's Sentimental Journey,' they doubted. A quick reference to the Century Dictionary under the word 'temper' disclosed the quotation and its author—the logical reasoning was simple, the word 'temper' as used in this quotation is unusual and therefore a good dictionary should take note of the fact—and it did. The Doctor's Library should contain a goodly supply of purely medical works and these should not be 'systems' but monographs and especially current literature, a good and carefully selected weekly, monthly and quarterly journals. But the Doctor's Library should not stop here, it should contain well selected works on general subjects, for we should not lose sight of the fact that a doctor is a learned man and a learned man should know something about everything and everything about his vocation in life. So with a library, it is a great thing to have a knowledge of glittering generalities of many, but a greater thing to be very familiar with a few. The Doctor's Library should have well thumbed volumes of Herbert Spencer, Darwin, Tyndall, Huxley and our own John Fiske. The doctor should be familiar with Emerson, Lowell, Holmes and a host of others. A knowledge of the history of medicine is not complete unless you are familiar with Oliver Wendell Holmes' essay on 'The Contagiousness of Puerperal Fever,' which alone is enough to immortalize him. In fact his volume of medical essays contains so much of interest to the doctor that any physician should be familiar with it. If you want to know something about Homeopathy and it's Kindred Delusions, about Border Lines of Knowledge in Medicine, about Scholastic and Bedside Teaching, of Medical Libraries, go to Holmes, where you will find not only a storehouse of information but where you will find it expressed in picturesque and classical English—for example, he says: 'A great many books may be found in every large collection which remind us of those apostolic-looking old men who figure on the platform at our political and other assemblages. Some of them have spoken words of wisdom in their day but they have ceased to be oracles; some of them never had any particularly important message for humanity, but they add dignity to the meeting by their presence; they look wise, whether they are so or not, and no one grudges them their places of honor. Venerable figureheads, what would our platforms be without you? Just so with our libraries. Without their rows of folios in creamy vellum or showing their black backs with antique lettering of tarnished gold, our shelves would look as insufficient and unbalanced as a column without it's base, as a statute without it's pedestal. And do not think they are kept only to be spanked and dusted during that dreadful period when their owner is but too thankful to become an exile and a wanderer from the scene of single combats, between dead authors and living housemaids. Men were not all cowards before Agamenon, or all fools before the days of Virchow and Billroth. And apart from any practical use to be derived from the older medical authors, is there not a true pleasure in reading the accounts of great discoverers in their own words? I do not pretend to hoist up the Bibliotheca Anatomica of Mangetus and spread it on my table every day. I do not get out my great Albinus before every lecture on muscles, nor disturb the majestic repose of Vesalius every time I speak of the bones he has so admirably described and figured. But it does please me to read the first descriptions of parts to which the names of their discoverers or those who have first described them have become so joined that not even modern science can part them; to listen to the talk of my old volume as Willis describes his circle and Fallopius his aqueduct and Varolius his bridge and Eustachio his tube and Monro his foramen, all so well known to us in the human body; it does please me to know the very words in which Winslow described the opening which bears his name, and Glisson his capsule and DeGraff his vesicle; I am not content until I know in what language Harvey announced his discovery of circulation, and how Spigelius made the liver his perpetual memorial, and Malpighi found a monument more enduring than brass in the corpuscles of the spleen and the kidney. Would you know how to recognize "male hysteria" and to treat it, take down your Sydenham; would you read the experience of a physician who was himself the subject of asthma, and who, notwithstanding that, in the words of Dr. Johnson, "panted on till ninety," you will find it in the venerable treatise of Sir John Floyer; would you listen to the story of the King's Evil cured by the royal touch, as told by a famous chirurgeon who fully believed in it, go to Wiseman; would you get at first hand the description of the spinal disease which long bore his name, do not be startled if I tell you to go to Pott—Percival Pott, the great surgeon of the last century.' At this particular time, it may not be amiss to quote his famous saying of fifty years ago, by substituting Pennsylvania for Massachusetts: 'God Save the Commonwealth of Pennsylvania.' He was the author of a phrase frequently used as an advertisement by banks: 'Put not your trust in money, but put your money in trust.' In closing I want to direct your attention in all seriousness to a little publication, inexpensive but all valuable, which contains a fund of information not to be had anywhere else, a little volume which should be on the table of every man who makes the slightest pretense of being learned. If you would know the death rate from tuberculosis during the last year or the death rate from pneumonia or any special disease; if you would know the names of all the colleges or universities with a million or more endowment; if you would know how many of our fellow citizens carry a million or more life insurance; if you would know the principle athletic events; if you would know the winners of the Noble Prize; if you would know the salary of the President, a senator, a cabinet officer or if you want to see a copy of the Volstead Act; in short, if you want up-to-date information on any subject, consult the World Almanac, published every January."

Dr. Theodore Diller said it required no argument to support the proposition that medical students and physicians must all through their lives read medical books and journals, but if he confined his reading wholly to medical literature he was apt to be dull, overly serious and lacking in sense of balance and proportion. He would speak tonight only of the nonmedical portion of the physician's reading. He recommends strongly the little work by Richard DeBury, Bishop of Durham, in the twelfth century, entitled "The Love of Books." He could not understand why college graduates so generally thought it a good joke to be ignorant of the Bible and that they had forgotten their Latin. Rather these things ought to be lamented. If one is to have reading time for things nonmedical he must limit the time he may devote to ephemeral reading, newspapers, weekly and monthly magazines. The three leading men of this country were Oliver Wendell Holmes, S. Weir Mitchell and Osler. To Garrison for his Medical History and J. J. Walsh for his essays, we are greatly indebted. It is interesting to note how many great medical men have made a place for themselves in general literature; among them are John Locke, Keats, Oliver Goldsmith, and Thomas Hardy. I wish here to commend a little book on the appreciation of books by Arthur Meachan. He quotes and discusses three great books: Rabelais, Don Quixote and Pickwick Papers. He might well I think have added Burton's Anatomy of Melancholy, and that quaint book, copy of which Dr. Osler carried in his vest pocket for thirty years, Religio Medicio by Sir Thomas Browne. I wish to acknowledge publicly the debt I owe to my good friend, Dr. James Heard, by whom I was introduced successively to a number of good books, among them three from which I have derived the keenest pleasure: "The Complete Angler," "Pep's Diary," and finally too, the sayings of "Ptah Hotep." This last named author lived, Cambridge scholars tell us, some three thousand years before Abraham and his sayings are filled with the most delightful wisdom. I think you could hardly find anything superior to this, so applicable to the energetic physician who bends all his energies to medicine and medical literature and has none of anything else: "The archer hitteth the target, partly by pulling, partly by letting go. The boatman reacheth the landing partly by pulling, partly by letting go."

Dr. H. P. Ashe in his discussion said: "Some authors that could fill deserving places in medical libraries, it is to be regretted, composed works no longer to be found. A Greek physician, at the court of Artaxerxes Mnemon, king of Persia, by the name of Ctesias, wrote a history of Persia, and another of India, in the fifth century before the Christian era, which was highly esteemed by his contemporaries, but of which only a few fragments remain at this time. He was probably the only historian that was also a physician. Books that show us what others think of the physician should be particularly interesting. For instance "Middlemarch," by George Eliot, ably depicts in Doctor Lyndston, the young physician starting out with high ideals and ending in becoming a high-society doctor. There are those who have been ignored for no good reason. Marat, one of the triumvirate which ruled France during the "Terror," and editor of the paper "Fried of the People," had a career as a physician in Holland and Paris, prior to the French Revolution. His writing during this critical period carried great weight and history does not record any other physician in so lofty a political position.

Doctors C. C. Mechling and H. M. Hall joined in the discussion and Dr. Hagemann closed the discussion of his presentation. Lester Hollander, Reporter.

DAUPHIN—APRIL

The April meeting of the Dauphin County Medical Society was held on April 1st in the offices of the local Veterans' Bureau, and the program was provided by the members of the Bureau Staff. The character and extent of the work was discussed by the heads of the several departments.

Dr. Richard Miller, Assistant Psychiatrist, reported that 50% of the cases examined and treated in his department were psychasthenics — the remainder were comprised of hysteria, tics, traumatic neuroses, thyroid toxicoses, epilepsy, neurosurgical, mental deficiency, dementia precox, hemiplegia, and rarely paresis and malingery. Dr. J. W. MacMullen, Chest Specialist, called attention to the association of pulmonary tuberculosis with lesions of the upper respiratory tract, and to the definite improvement in the general condition when these latter lesions were corrected. Dr. A. J. Griest, General Examiner, outlined the work of his department, and reported a case of duodenal ulcer treated medically. Dr. L. B. Bradford of the Ear, Nose and Throat Department, discussed the common cold, calling attention to the fact that one out of every four persons has one or more attacks every year, and is incapacitated three or four days in each instance. His routine treatment for this condition is first an "ironing out" of the mucous membrane with Dobell's solution and adrenalin, and secondly the application of arkase, a penetrating silver salt preparation. Dr. Carson Coover, of the Orthopedic Department, divided his cases into the inactive, or those that had attained the maximum improvement, which were in the majority, and the improvable which were chiefly the chronic arthidides. Dr. Harvey Smith, of the Surgical Department, reported a case of subacute perforating gastric ulcer of the lesser curvature cured by excision and gastrojejunostomy, with x-ray pictures before and after operation. Dr. S. B. Behney, the Dental Roentgenologist, presented several interesting films of some of the typical lesions that had come under his observation. Dr. Paul Eves, of the Dental Department, called attention to the relation of dental defects to pulmonary tuberculosis, and spoke of the necessity of special care in dental prothesis for these cases. Dr. Frank Reckord, Chief of the Medical Department, discussed the symptoms, signs, and treatment of visceroptosis. Dr. Botts, District Medical Officer of the Philadelphia Office, said he regretted that with the wealth of clinical material available circumstances did not permit research work by the Veterans' Bureau; that their work did not stop with treatment but must continue, if possible, until the claimant is reinstated as an independent member of society.

A supper was served by the office force of the Bureau. W. Minster Kunkel, Reporter.

DELAWARE—MARCH

Stated meeting of the Delaware County Society was held on March 13, 1924, at the Chester Hospital. The meeting was called to order at 9 p. m. by President Dr. S. P. Gray. Attendance, 32 members. New member elected, Dr. E. Marshall Harvey, Media, Pa.

After a short business meeting Dr. Frank Crozer Knowles was introduced as the speaker of the evening. His subject was "Common Diseases of the Skin." Dr. Knowles gave a very practical and instructive talk which was illustrated by lantern slides, depicting various common skin lesions in different types and stages. The following conditions were touched upon: Alopecia areata, tinea tonsurans, acne vulgaris, eczema, impetigo contagiosa, sycosis vulgaris, tinea sycosis, epithelioma, impetigo bullosa, pustular syphiloderm, tertiary syphiloderm, psoriasis, tinea circinata, pityriasis rosea, papulosquamous syphilid, seborrheic dermatitis, tinea cruris, ichthyosis, scabies, tinea versicolor, herpes zoster, pediculosis corpis, serpiginous syphilis, and eczema-like ringworm of the toes.

The illustrations were very typical of the diseases represented, and the remarks made by Dr. Knowles on the diagnosis and the treatment of each type of disease were very interesting and instructive. A number of the members of the society discussed various phases of the subject and Dr. Knowles closed by answering questions asked concerning the skin lesions in drug poisoning by arsenic, luminal, bromides and verinol.

A buffet luncheon was served after the meeting and all the members expressed their great appreciation of Dr. Knowles' splendid talk.

George L. Armitage, Reporter.

ERIE—APRIL

The Erie County Medical Society met at the Central High School, April 1st. Dr. R. W. McNealy of Cook County Hospital, Chicago, presented a paper on "Problems of Blood Vessel Surgery."

Speaking of sympathectomy, this was defined as the removal or stripping of the sympathetic nerve plexuses which are to be found in the sheath and adventitia of the larger arteries, and was first accomplished by Jaboulay in 1889. It met indifferent acceptance and was practically discarded until 1913 when Leriche published the first of a series of articles which have attracted quite universal attention. The theory upon which this operation is based leaves many important questions unanswered. In experimental work on dogs, neither Leriche nor Lehman have been able to produce the physiological changes in an extremity, following sympathectomy, which were described by the former in his clinical cases.

"Most of my cases have been either endarteritis obliterans or Raynaud's disease. I must confess that for the most part my results have not come up to expectations. I should state, however, that I have not had an opportunity to try it in those cases which have been most amenable in the hands of Leriche, i. e., cases of traumatic disorders of Babinski—Froment type; causalgia of Weir Mitchell and indolent ulcers in amputation stumps.

"I must conclude from my experience that one should have a very clear indication for this operation before attempting it. It is of no avail in conditions wherein the arterial lumen is constricted as a result of organic change in the arterial wall.

"In our cases we have been able in most instances to confirm the immediate response of the artery to mechanical stimulation and have noted an improvement in color as well as increased surface temperature of the extremity coming on soon after operation and lasting from a few days to several weeks.

"In conclusion, I feel that at the present time this operative measure is being used on cases where failure is predestined because of vessel wall changes. We must, however, have more clinical experience as well as experimental work along this line to improve our rather uncertain indications for the operation of sympathectomy."

Vein ligation although apparently unrelated has much in common with the subject which we have just discussed.

Previous to 1913 it was considered that a simultaneous ligation of a large vein and artery in the same extremity added greatly to the likelihood of ensuing gangrene. In 1917 M. Van Kend carried on some experiments and presented the following observations to the Inter-allied Conference of Surgeons held in Paris: "It appears then from the standpoint of the physiologist that to leave the main vein viable after occlusion of the main artery of a limb, diminishes what may be called the residuary blood pressure maintained by the collateral circulation. If the contribution of the collateral circulation is allowed to remain with the main vein intact, it is natural that the residuary blood pressure should fall. If this view be adopted, ligature of the vein as well as artery should be recommended in order to retain the blood supplied in longer contact with the tissues. Thus the most satisfactory conditions for maintenance of the nutrition of the organs are provided, because the obstacle to the return circulation provided by ligature of the vein retains the blood for a longer period in the member." Following Van Kend's remarks these conclusions were adopted by the conference: "Contrary to what has until now been believed, simultaneous ligature of both artery and vein when both vessels have been wounded does not give rise to increased risks of gangrene; in fact it diminishes them. Facts tend to prove even when the wound is limited to the artery, that simultaneous occlusion of the unwounded vein is to be recommended."

Hamilton Drummond worked with loops of small intestines of cats and found the same principle to apply to intestinal vessels. Larger areas of gut become gangrenous where the artery alone was ligated than when both artery and accompanying vein were ligated.

When one or more arteries to a part are occluded certain changes may take place. 1. The amount of arterial blood to the part is lessened. The extent of the diminution will depend upon the number and completeness of the occlusion and the richness of the collateral circulation. 2. The tissues are deprived of their nutrition because the interchange of substances through capillaries is much reduced. 3. The capillary area is greatly diminished by a collapse of a large number of capillaries. 4. Rhythmic capillary contractions are probably little interfered with unless deprived of circulating fluid for a considerable period. 5. The venous return is altered only to the extent of lessened pump action or decreased muscular activity. 6. The tidal flow is obviously much lessened and the residual blood materially reduced. 7. Intravascular pressure is decreased in the vessels distal to the occlusion.

Where one or more arteries are partially or completely occluded there occurs a marked disturbance in the circulatory equilibrium since blood is more readily carried away by the veins than it is supplied by the arteries. This increased capillary bed per unit volume of blood results in a marked decrease in intravascular pressure distal to the occlusion. A certain minimum intravascular pressure must be maintained in the capillary area to prevent the permanent collapse of large areas as well as to insure sufficient interchange of certain substances between the blood and the tissue cells.

Krogh's work on capillaries has thrown light upon some questions which have confronted those interested in this work. One very important observation seems to bear upon the rhythmical capillary contractions. It was found that under normal conditions only part of the capillaries of a given area are open at one time and only under the stress of markedly increased tissue activity are all the capillaries open. Krogh has also pointed out the fact that capillary interchange of substances between blood and tissue cells is one of diffusion through a membrane rather than selective permeability, and that variations in capillary pressure have much to do with the rate of interchange between blood and tissue cells.

Simultaneous vein ligation must be so selected that it will serve only to restore circulatory equilibrium and must not result in too great a damming back of blood lest ill effects of passive congestion outweigh the beneficial effects of increased capillary pressure.

Knowing the good effects which may be expected following vein ligation, one must also bear in mind that there is a certain lethal limit in the tidal flow of blood to an extremity or tissue less than which anemic necrosis or gangrene inevitably occurs.

In regard to wiring aneurysms, there are several points which must be born in mind in selecting cases for wiring. Those of the saccular type occurring in either the ascending or transverse arch are particularly suitable cases for wiring. It must be borne in mind that those extremely large aneurysms which have already eroded the chest wall over a large area and produced atrophy of the skin are not good risks. The danger of infection from the anemic soft parts immediately over the aneurysm is a serious consideration in such cases and hastens the rupture of the aneurysm by rendering its walls friable.

Aneurysms of the abdominal aorta have not proved very successful in our hands. In one case after exposing the aneurysm through an upper median incision we found the sacculated aneurysm which was located just below the celiac axis to contain a large broken-down clot. We inserted our canula and withdrew about one and one-half ounces of yellowish gray pus from the center of the sacculation. We made no attempt to wire this case and were convinced on postmortem examination that no good could have resulted.

In another abdominal aneurysm which we wired there resulted a firm clot in the sacculation, but the clot also extended to the renal arteries and the patient died with the sympoms of uremia.

In conclusion I may say that these operations of wiring cannot be called curative operations but they have a definite place among our palliative procedures. The average length of life of these thoracic aneurysms after the chest wall is eroded is hardly over seven to eight months. I have one patient who is now alive nearly two and one-half years.

ANNA M. SCHRADE, M.D., Reporter.

LUZERNE—MARCH-APRIL

The regular meeting of the society was held in the Medical Building on March 5, 1924, and was called to order by President Scheifly at 8:35 p. m.

Dr. Lewis H. Taylor reported for the Library Committee regarding the indexing of articles in the journals and placing them on the Bulletin Board. Dr. Trapold, Jr., reported for the Program Committee.

Drs. Henry E. Bittner and Joseph A. Alexis, both of Hazleton, Pa., were elected members of the Society.

A very interesting and instructive Heart Symposium was then presented to the Society by: Dr. Joseph P. Dougherty on "Etiology of Diseases of the Heart"; Dr. William J. Davis on "Relative Value of Physical Signs and Symptoms of Heart Disease"; Dr. William J. Doyle on "Treatment of Heart Diseases." The papers were discussed by Drs. Long, Deibel, J. T. Howell, Drake and L. Edwards and the discussion closed by Dr. W. J. Davis.

At the second regular monthly meeting of the society, held in the Medical Building on March 19, 1924, a most excellent symposium on "Surgical Kidney" was presented by: Dr. P. P. Mayock on "Urologic Study of Surgical Lesions of the Upper Urinary Tract"; Dr. D. Dailey on "Pathology of Surgical Kidney"; Dr. Trapold, Sr., on "Surgical Discussion of Kidney"; Dr. J. M. Nealon, "Aids and Limitations of Roentgenology in Surgical Urology." The papers were discussed by Drs. Howorth, Gibby, and Dr. Thompson, and the discussion closed by Drs. Mayock, Dailey, Nealon and Trapold.

The regular meeting of the society was held in the Society Building on April 2, 1924, at 8:35 p. m., and was called to order by President Scheifly.

Dr. Trapold, Jr., reported for the Program Committee that at the April 16th meeting a symposium on "Incipient Tuberculosis" would be given by Drs. Marsden, Tischler, Blair and Wyckoff.

Dr. Shaffer read a letter from Dr. Chevalier Jackson, Chairman of the Committee on Lye Legislation, requesting that the Society endorse legislation to be passed regulating the sale of lye. It was moved by Dr. Shaffer, and the motion seconded, that the Society comply with the request. Carried.

Dr. K. Winfield Ney, Professor of Neurosurgery at the New York Polyclinic Medical School, then gave a most interesting and instructive talk on the recent advances in neurosurgical diagnosis with a lantern slide demonstration, particularly stressing the diagnosis of brain tumor and the benefits to certain cases of epilepsy and other mental disorders obtained by injection of air into the lateral sinuses, which was appreciated very much by the members of the society.

CANCER MEETING

Dr. Wilmer Krusen, Director of Public Health of Philadelphia, addressed an exceedingly large audience in the Y. M. C. A., Wilkes-Barre, on the "Control of Cancer," March 28, 1924. He urged a periodical physical examination for every man, woman and child, as a means of preventing diseases which are yearly taking a tremendous toll of lives. He explained to the laity in detail the early symptoms of cancer and its ravages, pleading for a greater education on all public health lines as good citizenship and the welfare of the country depends on health and happiness.

Other talks on Public Health were given by Rev. J. J. Curran, Rabbi Marcus Salzman and Rev. Leon K. Willman which were very interestedly received. Dr. Charles Long presided.

The meeting was held under the auspices of the Luzerne County Medical Society for the American Society for the Control of Cancer. The committee in charge was Dr. S. P. Mengel, Chairman; Drs. Long, Meyers, J. B. Wolfe, C. W. Prevost, Evans, Shafer, W. J. Davis and P. P. Mayock.

H. IRVIN EVANS, M.D., Reporter.

LYCOMING—MARCH-APRIL

The March meeting of the Lycoming County Medical Society was held Friday, March the 14th, at the City Hall. Fifty-two members were in attendance. President A. F. Hardt presided.

The principal speaker was Dr. C. E. Ervin of the Department of Medicine, Geisinger Hospital, Danville, Pa., presenting the subject "A Few Known Facts About Glandular Therapy."

Dr. Ervin called attention to the futility of many of the compounds promoted by some manufacturing concerns. He emphasized the value of pituitrin as well as its dangers in maternity work—valuable in pneumonia and shock. Ovarian extract is almost useless. The value of thyroid extract is almost unlimited. Parathyroid is used in tetanus. Products of the suprarenal gland are very valuable as a styptic. It is not a heart stimulant and should not be used in chronic heart disease. Valuable in some cases of asthma. Insulin is a most valuable discovery. Dr. Ervin was very conservative in his recommendations regarding the therapy of these products. Drs. P. C. Reilly, W. F. Kunkle, Charles J. Cummings, L. M. Hoffman, R. B. Hayes, and A. F. Hardt participated in the discussion.

Dr. L. M. Hoffman gave a favorable report on the hypodermic administration of a solution of corpus luteum in the vomiting of pregnancy. Dr. R. B. Hayes recommended lutein in vomiting of pregnancy administered once or twice a day. Dr. Hardt spoke favorably of gland transplantation.

Dr. J. F. Gordner reported a case of rheumatism, chorea and endocarditis caused by septic tonsils. He emphasized that permanent injury to the heart could have been avoided if an early tonsillectomy had been done. Most marked and prompt results toward recovery followed a tonsillectomy.

Chas. A. Lehman reported a case of pregnancy in which high blood pressure came on suddenly with associated albuminuria. Shortness of breath was the only symptom. Later labor was induced and a dead fetus was delivered with good recovery of the mother.

Dr. P. H. Decker reported a case of aphonia caused by diphtheritic membrane formation on the vocal cords. Prompt favorable results followed the administration of 25,000 units of diphtheria antitoxin.

The April meeting of the Lycoming County Medical Society was held Friday afternoon, April 11th, in common council chamber, City Hall. Seventy members and thirty visitors, mainly dentists, druggists and nurses were present. President A. F. Hardt presided.

HORACE G. McCORMICK, M.D.

Hon. Emerson Collins, ex-deputy attorney general, was present by invitation and delivered a eulogy on Dr. Horace G. McCormick, whose death occurred at his late home in Williamsport, March 28, 1924. He stated that Dr. McCormick had what has been called the first requisite of success—a good ancestry. Graduating in 1874 from the Jefferson Medical College he immediately located at Montoursville, where he practiced for twelve years, after which he located at Williamsport, where he continued in the practice of his chosen profession until two years ago when his health failed. Dr. McCormick served as coroner of Lycoming County and was four times made president of the Lycoming County Medical Society. In 1893 the Medical Society of the State of Pennsylvania met in annual session at Williamsport and honored Dr. McCormick by electing him president. He was a leader in the medical profession and wielded a great influence, and his influence brought about the passage of the Medical Practice Act of 1893. He was made president of the first Board of Medical Examiners, and was active in local and county politics. His deepest interest was always manifested in the success of the Williamsport Hospital, where for many years he was a member of the Board of Managers, Chaiman of its Executive Committee, and its directing head. Some writer says that there is an especial pathos in the death of a doctor—himself at last conquered by the foe against whom for others he so often battled successfully. The memory of Dr. McCormick will live in hearts and homes grateful for what he did, in the annals of your Society, in the traditions of the profession he adored, in the great institution he wrought for with such passionate devotion, and for a manhood that quickened and strengthened all his activities. His was a long life; it was filled with work and usefulness, crowned with honor and success. As the shadows lengthened and the night was near he could know that God had been good to him and with content look upon what lay behind and with faith await the dawn ahead.

The scientific program was devoted to the study of "Cancer and Its Control." Dr. Edward J. Klopp, of Philadelphia, was the principal speaker of the day. He emphasized the importance of early diagnosis of tumors or enlargements that might become cancerous, and thorough examination and investigation by every means of all structures showing abnormal conditions, and which might possibly be precancerous. He presented in detail abnormal conditions that might be precancerous in the breast, uterus, rectum, gall-bladder, stomach, bladder, prostate, ovary, skin, lip, larynx, lung, thyroid, esophagus, colon, and bones. The differential diagnosis of other conditions was discussed. The exhaustive presentation of the subject made it a very valuable and instructive address for the physicians.

In the evening at eight o'clock in the courthouse a public meeting was held, and Dr. Klopp delivered a very exhaustive address on "Cancer and Its Control" to a very large and appreciative audience.

W. F. Kunkle, M.D., Reporter.

MERCER—MARCH

The regular meeting of the Mercer County Medical Society was held on Thursday evening, March 20th, at eight o'clock at the Sharon County Club, Sharon, Pa.

The five candidates for the State Legislature were guests of the Society. Dr. Howard C. Frontz, of Huntingdon, President of the Medical Society of the State of Pennsylvania, presented the One Board Bill, the amendments to the Workmen's Compensation Act, and legislation relative to vaccination and antivivisection in a most able manner to the candidates. Each would-be legislator responded by giving his hearty approval of the proposed measures. The Society appreciated Dr. Frontz's able talk and gave him a rising vote of thanks. A buffet luncheon followed. Adjourned to meet in May at Mercer.

Edith MacBride, M.D., Sec'y-Reporter.

PHILADELPHIA

March 12, 1924

The President, Dr. F. Hurst Maier, in the chair.

Dr. Arthur Biedl, Professor of Experimental Pathology, University of Prague: "Some Questions of Thyroid and Hypophyseal Pathology."—The historical development of our knowledge of the endocrins explains the interpretation of symptoms as evidence of the involvement of one special gland, but in the late nineties, statements were made that more than one gland might be involved, as gonads and thyroid as well as pituitary in acromegaly. In 1909 the idea of a polyglandular insufficiency was brought forth, with thyreo-suprarenal-ovarian and hypophyseal-thyreo-testicular cases described. Polyglandular sclerosis was found, showing the same pathological process in all because of a constitutional diathesis. Pathology must be based on the genesis, structure and function of the glands. Not only are the glands antagonistic or correlated in action, but there is also a definite relation to the nervous system. A discussion of the endocrins must embrace their position in the endocrin system, the control by other endocrins and by the nervous system, and their autonomy, which depends on their physico-chemical condition. Attention cannot be centered on one gland—it is from this error that our present discrepancy in our views on pathogenesis has arisen.

How far does the morphology (by comparative anatomy, etc.) explain the relation (genetic and functional) between the thyroid and pituitary? The thyroid arises from the entoderm of the pharyngeal floor—whether or not the ectoderm of the pharyngeal pouches enters in is not yet established. The follicles filled with colloid are the remains of embryonic activity. The true nature of the secretory process of the thyroid lies in the fact that its epithelium possesses a polarity opposite to the other gland cells, the product is sent out by the blood stream and the unrequired surplus is stored in the follicles. A better understanding of the connection between the chemistry and morphology, the process of production and the output of the secretion must be reached. In his laboratory Dr. Biedl is now studying the distribution of iodin in the cells and follicles compared with the iodin content of the gland and the blood. Goiter in relation to the function may mean nothing or much, there may be hypo-, hyper-, or dysfunction. As regards the morphology of the pituitary, the cry that it is of purely ectodermic origin has been proven wrong. It produces three endocrin substances, one from the anterior part, or prehypophysis, influencing growth, one from the pars intermediaris, influencing metabolism, and a third from the pars tuberaris, the function of which is still unknown. Secretion from the anterior lobe is poured into the blood vessels, the excess being stored in the follicles. The pars intermediaris discharges its product via the lymphatics into the cerebrospinal fluid. Certainly there is an interrelation between the morphology of the thyroid and pituitary, as evidenced by the increase in size of the pituitary with thyroid failure, and vice versa. Skeletal growth, body development, gonads and metabolism all must be considered in this study. The parathyroids and thymus bear a close genetic and topographical relationship and are functionally related to the thyroid and pituitary also. While the anterior lobe of the pituitary when hyperactive increases skeletal growth in all directions, it is commonly noted that the hyperthyreosis of adolescence exhibits an abnormal length of the long bones. Then again, while in gigantism there is an increase of bone growth in all dimensions, in acromegaly there is an increase in the peripheral ends of the bones of the face and extremities and an hypertrophy of soft parts. May this not be due to an hypertrophy of different cells of the pituitary? Experimental studies on the effect of these two glands on the gonads has shown that (in animals) extirpation of the thyroid leads to genital aplasia and degeneration of the gonads. Extirpation of the pars intermediaris of the pituitary brings about a degeneration of the gonads, while removal of the anterior lobe results in a lack of gonad development. Clinically, hypoplasia of the thyroid results in a degeneration in the gonads; there is a developmental arrest of the testicles in hypofunction of the anterior lobe of the pituitary; and lack of the pars intermediaris (by increased intracranial pressure) results in Fröhlich's syndrome, or dystrophia adiposo-genitalis. In turn, we note the effect of the gonads on the thyroid and hypophysis in castration and pregnancy; amenorrhea or menorrhagia or increased libido may be the early indications of a hyperthyreosis. In considering the hormone control of metabolism, it is commonly known to-day that thyroid substance increases the basal metabolism rate, and this test is now made to determine the quantitative thyroid activity. The significance of thyroid activity on the tolerance of different foodstuffs (e. g., sugar) is now being studied and a return to a normal tolerance after the subsidence of the disease is frequently found. The specific dynamic influence of proteins on hypophyseal activity is not yet proved. Although Cushing has said that in acromegaly an increased basal metabolism rate has more diagnostic significance than the clinical symptoms, may not this increased rate be due to the accompanying hyperthyreosis? Animal experimentation has shown no effect on basal metabolism from the anterior lobe and very little increase from the pars intermediaris. What influence has the pituitary on the distribution and mobilization of fat? In studying these glands anatomical findings are fundamental. So far, the relation between their histologic picture and their function is not established. There is a theory that in acromegaly the pituitary undergoes two phases: (1) hyperplasia, and (2) regression and cachexia. The connection between acromegaly and dystrophia adiposo-genitalis frequently claimed cannot be granted, since the latter occurs without anterior lobe involvement, and pressure from the enlarged anterior lobe upon the pars intermediaris readily explains its coincidences. What is the connection between the hypophysis and brain through the infundibulum and stalk? There is a close connection between the pituitary and other endocrins, the central nervous system and all other organs and processes of the body.

In considering goiter Dr. Biedl said that his experience cannot harmonize with the American line between toxic and exophthalmic goiter. All goiters showing simple diffuse struma with physiological increase are considered pathological—they may be vascular, diffuse parenchymatous or simple nodular. The clinical differentiation is based on anatomical differences and also on symptoms: 1. Surgical because of respiratory or circulatory disturbance without signs of disturbed endocrin function; 2. Goiter of puberty; 3. Nodular adenoma (the two latter of little clinical significance). If an adenoma has remained symptomless for a year it seldom or never becomes toxic. Operative reduction is made only in those cases which show a higher degree of hyperthyreosis or Basedow's disease. True Basedow's (Graves) disease occurs only in cases showing constitutional anomalies, e. g., status hypoplasticus lanugo, thin transparent skin, incomplete genital development, flabby muscles, increased length and delicacy of long bones, droplet heart, large perpendicular stomach, hypoplastic gonads, marked excitability of the nervous system, mononuclear lymphocystosis, increased lymph tissue. Thyreoses, not true Basedow's, show no asthenia, no hypoplasia, no deviation from normal activities, but a strict line between the two cannot be drawn. The discovery of thyroxin has led to explanations of thyroid function, but the changes made in each publication on this subject show that no definite conclusions have been reached. Kendell writes that in Basedow's disease all cells of the body function abnormally; thyroxin will not produce this disease. Therefore, Basedow's is not hyperthyroidism. Touching on therapy, in Europe the iodin treatment is rather feared because of the aggravation caused in toxic goiter cases. Under iodin therapy exophthalmic goiter improves, but never returns to the normal. Iodin is used only when the clinical symptoms indicate that there is no danger. In light Basedow cases, small doses may help. The systematic use of Lugol's solution in Graves' disease is logical and good.

In Discussion Dr. C. E. de M. Sajous expressed his appreciation of the paper and paid tribute to Dr. Biedl as always the leading endocrinologist of the world. When Dr. Sajous first wrote on the endocrin glands he was judged foolish, since it was commonly thought that they were merely vestigial organs. As a clinician 20 years ago he studied them in the hope of finding relief for his patients, a viewpoint different from the present one of histology and physiology, yet the results of which are to-day being borne out by research.

Dr. Solomon Solis-Cohen expressed his admiration for the guest speaker of the evening, and stressed the necessity of considering the interrelations, correlations and complexities of the mutual actions of the components of the endocrin system. The activity of the autonomic nervous system cannot be separated from that of the endocrin system. Even the ameba is complex, with compensating stimulus or check of one part of the cell on another. Every cell in the body retains some of the primitive power of adaptation and he believes that not only is there a differentiation of different parts of the pituitary, but also a differentiation of parts of cells. Study makes us more conscious of the growing vista of our ignorance. Clinically, the whole glandular function, the whole growth, the whole metabolism, the whole individual, must be considered. Coincident disturbances may occur, as in one case mentioned displaying acromegalic hands, dwarfism, exophthalmus, goiter and a cretin face.

Dr. Stanley P. Reimann stressed the importance of studying the relation of one gland to another and of correlating the morphology with the function. Dr. Jos. MacFarland, studying the breast before and after puberty, during pregnancy and lactation, in an effort to determine the normal, found in each case a different appearance. Since the thyroid is far more labile than the breast it must differ under different physiological circumstances and phases of life. It is hard to determine by necropsy studies whether the thyroid is normal or has been changed by the disease which caused death. The pathologist, taking the dynamic view, thinks that the organ must change, therefore in goiter the classification by stages, "colloid," "hyperplasia," etc. There is no definite uniform picture in Graves' disease—70% show hyperplasia, while in 30% there may be the ordinary colloid gland. The normal may differ also in different localities (e. g., Switzerland, Pittsburgh). In the thyroid there are found frequently small cells like lymphocytes. Are these the potential thyroid cells that may become adenomas?

Dr. F. X. Dercum, neurologist and psychiatrist, in autopsies made at Norristown found many anomalies of the visceria and thyroid. The biologic peculiarities in mental cases are emphasized by the ductless glands. Cases of dementia præcox break down because of autodegeneration and it is possible that the original germ plasm lacked the normal intensiveness of growth, as this lack is expressed in the persistence of inferior tissues. The relation of the thymus to the thyroid is evidenced in Graves' disease, since a persistent thymus means a lower level of vitality, a resulting imbalance, and an overgrowth of the organ just above it to compensate. Although the pituitary increases with the removal of the thyroid secretion or with the persistence of the thymus, the imbalance goes on, involving parathyroids and pancreas. For example, in manic depressive psychosis, depressed phase, the thymus and parathyroids are in a state of profound exhaustion. The thyroid and pituitary drive to compensate. When after rest and feeding the first group are restored, the second group, still driving, leads to an overflow, resulting in the manic phase.

March 26, 1924

The President, Dr. F. Hurst Maier, in the chair.

Dr. Haven Emerson, Professor of Public Health Administration, College of Physicians and Surgeons, New York: "Preventive Aspects of Diabetes."—In presenting this paper Dr. Emerson aimed to outline the problem, to determine the causes for the increase in diabetes, and to analyze the causes and suggest measures for its reduction. In New York the crude death rate (per 100,000) fell in the years 1866-1922 from 36 to 12; the rate of deaths from diabetes rose from 1 to 25 (per 100,000), the per cent of all deaths due to diabetes increasing from .04 to 2%. In 1923 there were one-fourth as many deaths from diabetes as from tuberculosis and diabetes is now the eighth in order of frequency. During the years 1866-82 most of the diabetic deaths occurred in males from 40-50 years, but 1889-1900 showed an increase among women, especially after 70 years, and 1900-22 showed a marked increase in the female deaths from 50-90 years. In 1866 44% of New York's population was under 20 years, 14% over 45; in 1923 the population under 20 had decreased to about 38%, while there was 19% over 45. Hence the apparent increase in the cancer, cardiac, and to some extent diabetes deaths is probably due to the increase in the higher decades. The per cent of all deaths from diabetes in those 65 years and over increased from 19% in 1866 to 32% in 1923. More than one-half of the deaths occur between the ages of 45 and 64, the age of highest incidence being 60. The following figures indicate the incidence per 100,000:

Age:	*10–14*	*20–25*	*25–35*	*55–65*	*65–75*
1910	1.7	2.8	4.4	128	192
1920	3.2	4.2	4.8	131	236

The causes of the increase in diabetes deaths are three: (1) increase in the average age of the population; (2) increase in the Jewish element; (3) increase in consumption of sugar and similar articles of diet. The Jewish element in New York increased from 12% in 1890, 26% in 1910 to over 31% in 1924. The increase in the diabetic death rate from 8-18.9 during this interval exactly corresponds to the Jewish increase, which may be merely a coincidence, but should be borne in mind. In the United States the sugar consumption increased from 35 lbs. per person in 1890 to 103 lbs. in 1910; in England from 58 to 70 lbs.; in France from 28 to 40 lbs. States with a death rate from diabetes of over 20 per 100,000 are California, Connecticut, Maine, Massachusetts, New Hampshire, Oregon, Rhode Island and Vermont. Those with less than 10 are Kentucky, Louisiana, Mississippi, Montana, North and South Carolina and Tennessee. May the low per cent in the latter group be due to the large colored population? The average rate in cities of the United States in 1921 was 16.8. Those with a rate over 20 were Baltimore, New York, Boston, Camden, Chicago, Los Angeles, San Francisco, St. Louis, New Haven and Patterson. In Germany during the war the rate fell from 9.5 to 6.0. In prevention, the diagnosis must first be made. Obesity, excessive food and diabetes have a close correlation. People must be persuaded to diminish the superabundance of diet especially in sugar. Structural lesions in the pancreas may be absent in diabetes, the disorder being purely functional, and indicating the necessity of rest for this organ. During the last 500 years, since the use of cane sugar, there has been a greater dietary habit change than has occurred with any other kind of food.

In Discussion Dr. J. H. Musser, Jr., brought out the fact that during the war the German diet was cut more in protein and fat than in carbohydrate. He wonders whether the high incidence among the Jews and the low incidence among the colored may not be due to occupation—(business vs. labor). He also said that there has probably been increased sugar consumption to compensate decreased alcohol and in closing stressed the dangers of overeating.

Dr. Wm. N. Bradley urged the prevention of diabetes in children, since the incidence and mortality in early life has doubled in the last twenty years. Heredity can be traced as a cause in 17-25% of cases; infections in 15%; 15-31% of the cases occur in the Jewish race; obesity is a large factor. The part played by infections in the etiology of diabetes is probably higher than has yet been shown, since the pancreas is involved in all infections, and fuel is added to the fire when, during convalescence, the patient is overfed. Diabetes, like tuberculosis, is insidious, and early detection and prevention among susceptibles is essential. An educational campaign should be undertaken to teach the avoidance of infection, proper diet, the value of physical exercise, the danger of obesity, and to discourage the marriage of diabetics. He questioned whether or not the apparent drop in diabetic deaths following the epidemic of influenza was not due to the removal of susceptibles.

Dr. Julius Blechschmidt stressed the importance of heredity as a factor in the diabetes occurring in early infancy and urged that blood sugar examinations be made in prediabetic children and infants.

Dr. Edw. Martin expressed his appreciation of Dr. Emerson's paper and asked how he would explain the sudden drop in the diabetic death rate following the influenza epidemic, since diabetes is a slow disease, "ripening" over a period of years.

Dr. Haven Emerson deplored the lack of statistics showing the incidence of diseases by occupations. He advises periodic health examinations, especially after convalescence. Since influenzal deaths occur largely in individuals under 30 and diabetic over 45 he cannot say that influenza was responsible for the drop in 1918.

Dr. Crowell said that severe functional derangement in the pancreas may occur without structural change. An explanation of this has not yet been found. Any lesions interfering with the Islands of Langerhans causing actual changes in the pancreas is of course productive of diabetes.

Dr. McGlynn doubts that a decreased alcohol intake has caused, as Dr. Musser suggested, an increased consumption of sugar.

Dr. Castleman said that 100 gm. of glucose given to any mild diabetic practically always results in urinary sugar, whereas a high blood sugar may occur after an infection, or a fasting blood sugar test may not show up a mild diabetic. Therefore he thinks that a routine glucose tolerance test is the one of choice and advises that routine urinalysis be made after a definite test meal. Mary A. Hipple, M.D., Reporter.

PENNSYLVANIA NEWS ITEMS

DEATHS

Dr. Isadore K. Gardner, of Pittsburgh, who was graduated from the University of Pittsburgh School of Medicine in 1921, died recently, aged 28 years.

Dr. Silas M. Hazlett, of Allensville, who was born in 1871, and was graduated from Jefferson Medical College of Philadelphia in 1897, died on March 9th.

Dr. Charles M. Sloan, of Madison, who was graduated from the University of Pittsburgh School of Medicine, in 1897, died on February 29th, aged 56 years.

Dr. Thomas Monie, of Archbald, aged 57 years, died on February 10th, of bronchopneumonia. He was a graduate of the Medico-Chirurgical College of Philadelphia in 1899.

Dr. Charles M. Strickler, of Lebanon, who was a graduate of the University of Pennsylvania School of

Medicine, Philadelphia, class of 1890, died recently, aged 57 years.

Dr. Laura J. Dice, of York, aged 72 years, died on March 25th of cerebral hemorrhage. Dr. Dice was a graduate of the Woman's Medical College of Pennsylvania, Philadelphia, class of 1890.

Dr. J. R. G. Allison, of Millheim, aged 67 years, died on March 21st. His sudden death was due to heart trouble. Dr. Allison was graduated from Jefferson Medical College of Philadelphia in 1884.

Dr. William H. Mosteller, of Phœnixville, who was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1884, died of cerebral hemorrhage on February 19th, aged 65 years.

Dr. James M. Lupher, of Townville, died on March 9th, aged 77 years. Dr. Lupher was graduated from the Eclectic Medical College, Cincinnati, Ohio, in 1884. He practiced for many years at Pleasantville.

Dr. Julia Gould Waylan, of Wernersville, aged 67 years, died recently of uremia following an operation. Dr. Waylan was graduated from the New York Medical College and Hospital for Women, New York, in 1894.

Dr. Charles B. Throckmorton, of Canonsburg, aged 54 years, died on March 19th following a long illness. Dr. Throckmorton was graduated from the Western Pennsylvania Medical College, Pittsburgh, in 1896.

Dr. Grace Wintersteen, of the Harrisburg State Hospital, Harrisburg, died on April 3d. Dr. Wintersteen was born in 1864 and was graduated from the Woman's Medical College of Pennsylvania, Philadelphia, in 1893.

Dr. Harry Gray Kilpatrick, of Philadelphia, aged 52 years, died on March 3d, at St. Mary's Hospital, following an operation. Dr. Kilpatrick was a graduate of the Medico-Chirurgical College of Philadelphia, class of 1892.

Dr. John William Trabert, of Lebanon, formerly on the staff of the Good Samaritan Hospital, died on March 29th, aged 79 years. Dr. Trabert was a graduate of Jefferson Medical College of Philadelphia, class of 1870.

Dr. John A. Lentz, formerly of Northampton, died on February 24th at Palo Alto, Cal., after a prolonged illness. Dr. Lentz was born in 1897 and was a graduate of Jefferson Medical College of Philadelphia, class of 1920.

Dr. Charles T. Steck, of Berwick, died suddenly in his office on March 29th, aged 70 years. He was a graduate of the University of Pennsylvania School of Medicine, Philadelphia, class of 1878. Dr. Steck was also a druggist.

Dr. William W. Jones, who was born in Pittsburgh in 1852, and was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1878, died of paralysis agitans on March 19th at his home in North East.

Dr. Enos K. Strawn, of West Newton, aged 80 years, a past president of the Westmoreland County Medical Society, died on January 17th, at Los Angeles, Cal., of heart disease. Dr. Strawn was graduated from the Fort Wayne (Ind.) College of Medicine in 1880.

Dr. Fitz Randolph Moore, of Butler, aged 33 years, died on March 29th of septicemia, contracted while operating on a patient. Dr. Moore was a graduate of the Johns Hopkins University Medical Department, Baltimore, class of 1920, and was on the staff of the Charity Hospital, Shreveport, La.

Dr. Henry J. Miller, of Philadelphia, who was born in 1854 and was graduated from the College of Physicians and Surgeons, Baltimore, in 1883, died on March 20th. Dr. Miller practiced in Ohio, Tennessee and West Virginia, and was chief surgeon of the Nashville and Tennessee Railroad before settling in Philadelphia.

Dr. Martha S. Everitt, a former practitioner in Pennsylvania, died in Chicago, Ill., on April 5th after a decade of active practice in the Middle West. Dr. Everitt was a graduate of the Woman's Medical College of Pennsylvania, Philadelphia, class of 1895. She was the widow of George Bain Everitt, former member of Congress from North Carolina.

Dr. Richard H. C. Gibbons, of Honesdale, and a member of the Medical Society of the State of New York, died on April 8th, aged 74 years. Dr. Gibbons was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1874. One son, Dr. Myles Gibbons, and one brother, Dr. Peter Gibbons, both of New York, are the immediate survivors.

Dr. Tucker Lucas Randolph, of Pittsburgh, who was born in Florida in 1892, and was graduated from Jefferson Medical College of Philadelphia in 1916, died of pneumonia on March 18th at the South Side Hospital. During the World War he served with the British Army in France. He was on the staff of the South Side Hospital at the time of his death.

Dr. Park Potts Breneman, of Lancaster, died suddenly in his office on March 23d, aged 64 years. His death was caused by heart disease. Dr. Breneman was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1884. Following his graduation he went to Sydney, New South Wales, Australia, where he practiced his profession for nine years, during which time he traveled extensively into the wild districts in search of bird and animal specimens in pursuance of his interest in ornithology. After his return to Lancaster he specialized in x-ray and electrotherapeutics and was considered one of the pioneers in this work in that part of the country. He was also on the staff of St. Joseph's Hosiptal.

Dr. Maud Conyers Exley died at her home in Harrisburg on March 16th following an attack of grip which developed into pneumonia. Dr. Exley was born in England in 1873. She established her practice in Harrisburg in 1912, two years after her graduation from the Woman's Medical College of Pennsylvania, Philadelphia. Prior to coming to Harrisburg and while practicing in Philadelphia, Dr. Exley was an assistant to Dr. Ellen Potter, now State Secretary of Welfare. After assuming practice in Harrisburg Dr. Exley was made a member of the Harrisburg Hospital staff, being connected with the obstetrical division, but recently she was compelled to resign that part of her practice, owing to her increasing office and call duties.

Dr. Horace G. McCormick died at his home in Williamsport on March 28th following a long illness. Dr. McCormick was one of the best known physicians in Williamsport and was a prominent member of the Lycoming County Medical Society, and a member of the board of directors of the Williamsport Hospital. He was born in 1850 and was graduated from Jefferson Medical College of Philadelphia in 1874. He was elected president of the Lycoming County Medical Society four times, and in 1893 he was elected president of the State Society. He was president of the first board of examiners appointed under the act which created the present Bureau of Medical Education and Licensure. In addition to his medical career, he always took an active interest in the progress of education, and served as a school director both in Montoursville and in Williamsport. Dr. McCormick is survived by his wife; one son, Seth T., Jr., of Williamsport; and two daughters, Mrs. Brooke M. Anspach, of Philadelphia, and Mrs. Karl Mosser of Boston.

BIRTHS

Dr. and Mrs. J. Loy Arnold, of Harrisburg, recently announced the birth of a son.

Dr. and Mrs. George R. Moffitt, of Harrisburg, have announced the birth of a son, April 17th, at the Harrisburg Hospital.

MARRIAGES

Dr. Frank F. Simpson, of Pittsburgh, and Miss Ruth Prentiss Ring, of Philadelphia, were married on March 12th.

The marriage of Dr. Ralph H. Merkel, of Pottstown, and Miss Elizabeth Schilling, of Columbus, Ohio, took place on February 6th.

Miss Marjorie Young Gibbon, daughter of Dr. and Mrs. John H. Gibbon, of Philadelphia, will be married to Winthrop Hilton Battles, of Philadelphia, on May 10th, at the country home of the bride's parents at Media.

The marriage of Miss Mazie G. Frazier, daughter of Dr. Charles Frazier, of Chestnut Hill, to Dr. Richard H. Meade, son of Mr. and Mrs. Richard Hardaway Meade, of Richmond, Va., will take place on June 14th.

ITEMS

Dr. and Mrs. O. G. A. Barker, of Johnstown, recently spent three weeks in Cuba.

Dr. and Mrs. J. B. Woodruff, of Johnstown, have returned home after spending the winter in Florida.

Dr. and Mrs. Charles E. Hannan, of Johnstown, have returned from a three weeks' visit to Pinehurst, N. C.

Dr. L. W. Jones, of Johnstown, has recovered from an attack of erysipelas. He was confined to bed for three weeks.

Dr. Francis Ashley Faught, of Philadelphia, was recently appointed a visiting physician to the Misericordia Hospital.

Dr. William G. Falconer, of Clearfield, has left for Chicago and Rochester, Minn., where he will spend some time doing postgraduate work.

Dr. Francis Schill, of Johnstown, was a patient in the Memorial Hospital for several weeks suffering from a severe infection of the right thigh.

Dr. Carl V. Vischer, a surgeon at the Hahnemann Hospital, Philadelphia, has recovered from septicopyemia contracted in August, 1923, while performing an operation. Mercurochrome apparently featured largely in attacking the septic process.

Drs. W. Wayne Babcock and W. Egbert Robertson of Temple University, held the annual medical and surgical clinic April 15, 1924, for the staff of the Citizens' General Hospital, New Kensington, Pennsylvania. The clinic was enjoyed by the medical fraternities of several counties.

Leonard Carmichael, son of Dr. Thos. H. Carmichael, of Philadelphia, has been awarded the Sheldon Fellowship for travel and study abroad during the coming year, as the result of his record of scholarship in the Graduate School of Arts and Sciences of Harvard University.

Under the auspices of the Pittsburgh College of Physicians, the Third Bedford Lecture was given at the Duquesne Club, Thursday evening, April 24th. Dr. Frank Smithies was the speaker and had for his subject "The Origin and Development of Ethics in Medicine and Their Influence Upon Medical Practice."

Dr. Joseph C. Doane, superintendent of the Philadelphia General Hospital, Philadelphia, was recently elected president of the Hospital Association of Pennsylvania, succeeding Elmer E. Matthews. Others elected include Frank E. Brooke, superintendent of the Harrisburg Hospital, vice-president; and Miss Anna Laughlin, Waynesboro Hospital, vice-president.

Dr. George E. de Schweinitz, of Philadelphia, will be the guest of honor at the congress of the French Ophthalmologic Society to be held in Paris during the month of May. He will be presented with a plaquette after delivering a lecture before the faculty of medicine, and the minister of instruction will preside at the banquet in his honor.

The Annual Meeting of the Undergraduate Medical Association, of the University of Pennsylvania Medical School, was held on April 4th. Mr. Charles H. Best lectured on the Discovery and Development of Insulin. The Annual Mary Ellis Bell Prize for the best undergraduate work in medical research was given to Messrs. Landis, Long, Dunn, Jackson, and Meyers (all second-year students) for their work on the "Effects of Hot Baths on Respiration, Blood and Urine."

The Pennsylvania State Dental Society meets at Syria Mosque, Pittsburgh, May 13th to 15th, in annual convention.

The members of our Society are cordially invited to the sessions, and especially to hear E. M. Hatton, B.L., M.D., on Tuesday evening, at 8 o'clock. Subject: Changes Produced by Disease in the Pulp and Periapical Regions, and their Relationship to Pulp Canal Treatment and to Systemic Disease.

The 1923 House of Delegates of the Medical Society of the State of Pennsylvania provided for the appointment of a delegate to the 1924 session of the Pennsylvania State Dental Society.

The Third Annual Clinic conducted by the Westmoreland County Medical Society will be held May 15th, at 1:30 p. m., in the Greensburg Armory, and will be presided over by Drs. John B. Deaver and David Riesman, of Philadelphia. The clinic will be followed by a subscription dinner at the Greensburg Country Club.

The 1922 and 1923 annual clinics conducted by the Westmoreland County Medical Society were very largely attended and the instructions given were enthusiastically received. It is expected that at least five hundred physicians from Bedford, Somerset, Fayette, Beaver, Huntingdon, Blair, Washington, Allegheny and Westmoreland Counties will be in attendance.

Cases to be presented at the Clinic will be thoroughly prepared in advance by the members of the Westmoreland County Medical Society, and printed copies of the histories will be distributed to those in attendance prior to the case presentation by Drs. Deaver and Riesman.

Dr. Walter M. Bortz of Greensburg is President and Dr. Myers W. Horner of Mt. Pleasant is Secretary of the Westmoreland County Medical Society.

GENERAL NEWS ITEMS

Examinations will be held by the National Board of Medical Examiners as follows:

Part I, June 19th, 20th, 21st, 1924.
Part II, June 20th, 21st, 1924.

All applications for these examinations must be made on or before May 15, 1924. Further information may be obtained from the Secretary, Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia, Pa.

ANNUAL HEALTH EDUCATION CONFERENCE

At the invitation of the Massachusetts Institute of Technology, a working conference in Health Education is to be held June 23d-28th at Cambridge, Massachusetts. The conference called by the Health Education Division of the American Child Health Association will be limited to 100. Registration must be made in advance. Address Emma Dolfinger, 370 Seventh Avenue, New York City.

RETIREMENT OF DR. DE SCHWEINITZ

There is universal regret throughout the University of Pennsylvania over the resignation of Dr. George E.

de Schweinitz from the Medical School faculty. As a teacher and administrator Dr. de Schweinitz has contributed greatly to the prestige of the Medical School. Medical associations here and abroad have been glad to do him honor. Possessed of a charming personality, unusual fluency as a public speaker and recognized as a leader in his particular specialty, he has been in constant demand at scientific meetings. He has graced every position he has held.

PHILADELPHIA ACADEMY OF SURGERY
THE SAMUEL D. GROSS PRIZE

FIFTEEN HUNDRED DOLLARS

Essays will be received in competition for the prize until January 1, 1925

The conditions annexed by the testator are that the prize "shall be awarded every five years to the writer of the best original essay, not exceeding one hundred and fifty printed pages, octavo, in length, illustrative of some subject in Surgical Pathology or Surgical Practice, founded upon original investigations, the candidates for the prize to be American citizens."

It is expressly stipulated that the competitor who receives the prize shall publish his essay in book form, and that he shall deposit one copy of the work in the Samuel D. Gross Library of the Philadelphia Academy of Surgery, and that on the title page it shall be stated that to the essay was awarded the Samuel D. Gross Prize of the Philadelphia Academy of Surgery.

The essays, which must be written by a single author in the English language, should be sent to the "Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, care of the College of Physicians, 19 S. 22d St., Philadelphia," on or before January 1, 1925.

Each essay must be typewritten, distinguished by a motto, and accompanied by a sealed envelope bearing the same motto, containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay.

The Committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year.

The Committee reserves the right to make no award if the essays submitted are not considered worthy of the prize.

William J. Taylor, M.D.,
John H. Jopson, M.D.,
Edward B. Hodge, M.D.,
Trustees.

Philadelphia, March 15, 1924.

ONLY ONE BOARD IS NEEDED*

In no state should there be more than one medical examining board, and that one alone should issue licenses to practice medicine. Its members would not belong to any "school." They would be men of real medical education themselves, able to distinguish between a real college and a diploma mill—between a real doctor and a quack. They would know that a real doctor is one who has acquired a decent knowledge of all the many means by which disease, by himself or others, can be prevented and cured if curable. They will be ready to use suggestions or the manipulations of bones or viscera in cases demanding it—as ready as they are to administer drugs when drugs are needed or trust wholly to diet and outdoor life in the not infrequent instances when nothing more is required or can be done with any expectation of benefit.

Not one of the men licensed by such a board would claim universal efficacy for any form of treatment. Whoever does that is instantly revealed as a quack, either ignorant or dishonest, and he is not any the less a quack because he can produce "testimonials" from grateful patients, including the familiar legislator whose close relative was saved from fast-approaching death by an "irregular" after he, or more often she, had been given up by anywhere from one to a dozen "regular" doctors.

The number of people, otherwise intelligent, who can thus be deceived and with the best of intentions can deceive others as gullible as themselves is disgracefully and humiliatingly large.—*New York Tribune.*

Dr. O. Pine queries: In the brief interims between various medical "drives," would it not be quite appropriate for the committee interested to appoint a subcommittee whose function shall be to prevent or check reckless "driving"?

Dr. O. Pine queries: A headline in a local newspaper reads: "Worms Entering Rhineland Republic." Shades of Virchow, Koch, et al! What has become of the boasted German medical supremacy? Or are they short of anthelmintics?

A boastful oratorical quack punctuated an address to a street crowd with an occasional dash of argot. After emitting with great éclat a "Show me; I'm from Missouri," a heckler intervened with: "Yes, and isn't the place Kirksville?"—*O. Pine.*

An A-1 Medical Quartet:

Detection.
Reflection.
Correction.
Collection.—*O. Pine.*

Dr. O. Pine queries: Dear Editor, what desiccant can you most highly commend for the non-ethical lachrymosity of the weakling brother who chronically laments to all his contacts that Dr. Special, or Dr. Othermed, charges too much?

In a dissecting room lately a cadaver was seen to arise and protest: "Examine and dissect me more thoroughly, please. I have a few parts that by some oversight have not been assigned to specialists yet."—*O. Pine.*

Dr. O. Pine queries: Is it not time to exile from medical literature such *gaucheries* as McBlarney's sign, Silliman's syndrome, Sureboy's test, Hardpate's dressing, or Vain's modification of Largehead's mouth-gag?

Dr. O. Pine queries: Why do some members of the profession become so obsessed with the fear that it may become a labor union? Do they not realize that medicine has always dearly loved to be the abject, exploited tool of charity organizers? Are there enough mild objectors even now to prevent present seven-league boot encroachments?

Dr. O. Pine queries: Senator Pepper is quoted as remarking, "It is to be expected that state officers will blame their enforcement deficiencies upon the nation and the nation will regurgitate upon the states." Spiteful regurgitation, a serious national heart lesion, may we not opine?

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*Reprinted from the *Wisconsin Medical Journal,* April, 1924.

THE
MEDICAL SOCIETY OF DELAWARE

ORIGINAL ARTICLE

CLINICAL AND HISTOLOGICAL OBSERVATIONS IN THE TREATMENT OF NEOPLASTIC DISEASES BY COMBINED METHODS*†

WILLIAM L. CLARK, M.D., EUGENE J. ASNIS, M.D., AND J. DOUGLAS MORGAN, M.D.
PHILADELPHIA, PA.

Successfully to cope with a disease it is imperative that we possess a complete knowledge of three essential factors, the cause, the diagnosis and the treatment. Unfortunately we are not in possession of all these factors in our fight against neoplastic diseases. Our knowledge of the cause of these tumors is still obscure. While experience enables us to make, in most cases a correct diagnosis clinically, we have but one aid in the absolute diagnosis, and that after the disease has already become established, namely, the study under the microscope of a portion of the tumor. By means of a special "frozen section" technique which has been developed in our laboratory, as accurate a diagnosis can be returned, in about ten minutes, as by the longer paraffin method. In addition, the study of these sections permits of the "grading" of the tumors, according to the method of Broders, thus enabling a more accurate prognosis to be made, and influencing to a certain extent the treatment to be employed. Too much emphasis, however, cannot be placed on the necessity of making careful selection of the tissue to be examined. It has happened in the experience of most surgeons that a negative pathological report has been returned by a most reliable pathologist, in a case which clinically showed every evidence of malignancy, and which later proved the correctness of this latter diagnosis. The pathological report was not at fault in such a case, the mistake being, rather, in that too few sections were examined, or that a poor choice of tissue was made by the surgeon. However, although handicapped by lack of knowledge of the etiology, and thus deprived of the ability, in many instances, of making a really early diagnosis, we have, nevertheless, several measures at our command which, when properly selected and judiciously used, afford us weapons with which to combat these maladies.

The methods of proven value for the eradication of malignant tumors are: surgery, the electrothermic methods (desiccation and coagulation), the actual cautery, radium and x-rays.

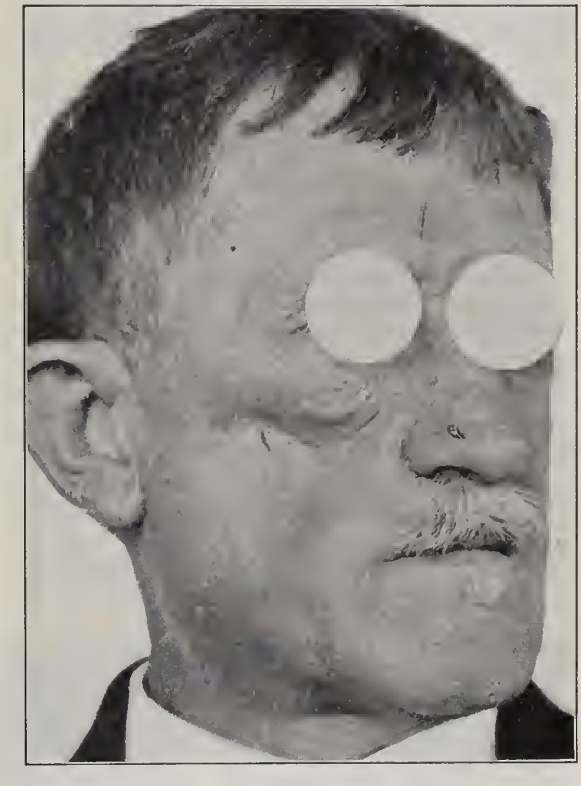

Fig. 1. Illustrating a case in which extensive carcinoma of the antrum was successfully treated by electrocoagulation through a cheek incision, by radium, locally, and by x-radiation over the lymphatic areas.

Prior to the introduction of the electrothermic methods, x-rays and radium, the surgeon's knife was practically the only available means at our disposal. In our institution, electrodesiccation and electrocoagulation have, in many instances, replaced this older method for reasons which will be given later, while radium and x-rays are used either singly, or in combination with the other methods, according to the requirement of the individual case. If we were asked which of these methods is the most efficient, we should answer that there are indications and contraindications to each; that the chief determining factors are the type, the size, and the location of the tumor; and that none of these methods is superior to, or can be used in all cases to the exclusion of, the others. While their efficiency is varied, and their therapeutic actions are more or less limited, each one excels in its own field, and it may be asserted that anyone who overlauds the benefits of the one and decries the others is not conversant with the facts. Experience alone can teach us which method, or combination of methods, should be used in any particular case. If success is to be attained, these must be judiciously adjusted by the determining factors already mentioned. As an example of the use of several methods in conjunction, let us take this case (Fig. 1) of malignant disease of the antrum. Here, the portal of entry was an incision in the cheek, through which the growth was destroyed by the coagulation method. The diseased area and the neighboring lymphatics, subsequently treated with radium and x-rays, were reached through different portals of entry.

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*Read before the Medical Society of Delaware, at Middletown, Del., October 9, 1923.

†From the Clinical and Pathological Departments of the William L. Clark Hospital.

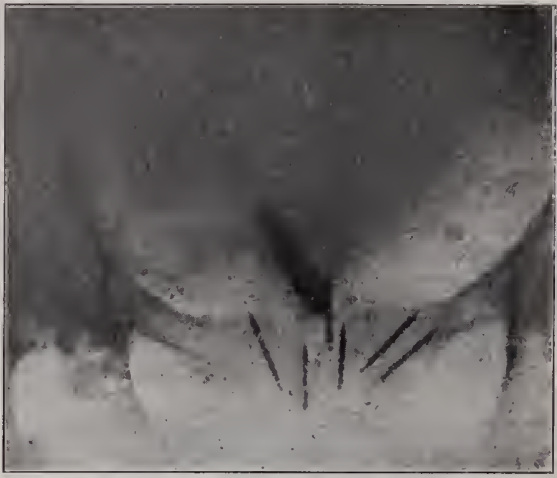


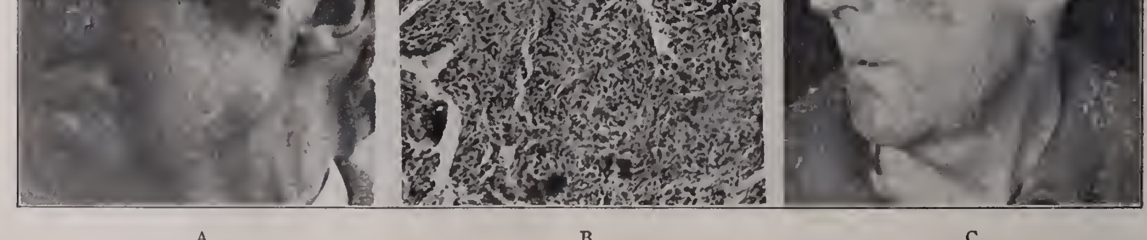
Fig. 2. A radiograph of radium needles in place at the outer margin of a carcinomatous uterine cervix and a radium capsule in the body of the uterus inserted through the cervical canal. Short wave length x-ray therapy is employed through various portals from the outside. This technic has proved very successful.

In malignant disease of the uterine cervix and adenxa it may be stated, without hesitation, that radium and x-rays have yielded brilliant results and have practically replaced surgery. (Fig. 2.) Where, however, the fundus of the uterus is involved, surgery still remains the method of choice, associated preferably with preoperative and postoperative radiation treatment.

Such breast tumors as are usually considered to be "operable" receive, preferably, a preoperative radiation and, always, several similar postoperative treatments. A preliminary x-ray study should be made to determine whether metastases have occurred in the lungs, mediastinum or vertebræ. These, if present, should receive "cross fire" radiation. As a routine measure we treat these structures, whether or not metastasis is demonstrated by radiographic study, since some focus of disease might have escaped notice.

When localized recurrences follow an amputation they can frequently be controlled by radium needles. X-ray therapy must, however, be used with caution in the chest in order to avoid injury to the lung tissue. In cases of carcinoma of the breast, with ulceration, too advanced for a scalpel operation, amputation is performed, instead, by the coagulation method.

In the treatment of basal and squamous epitheliomata, when strictly localized, the results of



A B C

Fig. 3-A. Squamous cell epithelioma of orbit, ethmoid, frontal sinus, and antrum. B. Microscopic appearance of a section from the growth. C. Showing the result of one coagulation operation. No such result could be obtained with any other form of treatment.

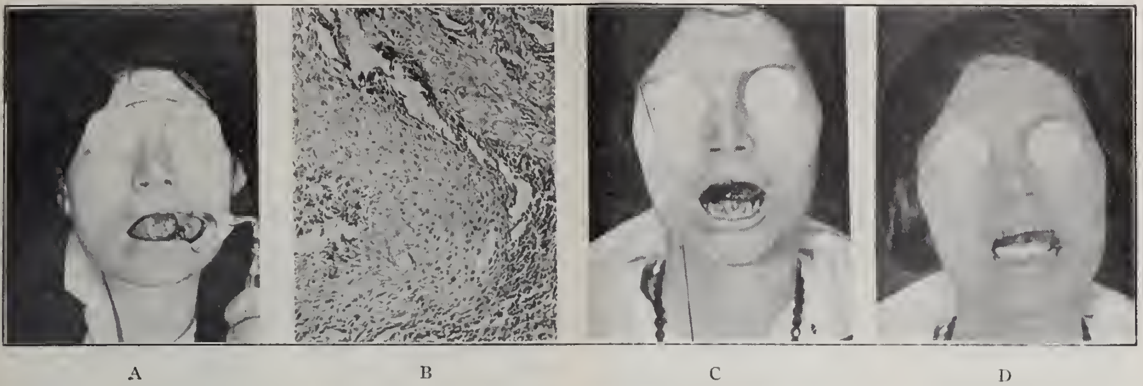


Fig. 4-A. Squamous cell carcinoma of the tongue. B. Microscopic appearance of the tumor. C. After amputation by the coagulation method. Soft pliable cicatrix. D. Artificial tongue made of moist cotton, very materially improving speech.

no other method, in our experience, can excel those obtained by desiccation, although a variety of methods (radium, xrays, excision, cautery, etc.) have been used with considerable, but varying, success. This treatment can be so regulated as to insure the destruction of the malignant cells without producing the charring which follows the use of the actual cautery. Histologically the tissues show very little fibrosis, hence the resulting cosmetic effect is unexcelled.

In advanced epitheliomata involving the nose, face and antrum, such as are usually regarded as inoperable, there is no method that can so successfully bring about the destruction of the neoplasm as that of coagulation. In like manner, the electrothermic methods have proved very successful in malignant disease of the orbit. (Fig. 3.)

The treatment, by radiation alone, of recurrences in these regions is usually unsuccessful, and often contraindicated. Desiccation, or coagulation, is the method of choice, the aim being to destroy the growth with one treatment. Should this not be possible, either one of these methods can be repeated as often as may be necessary, without hazard to the patient.

In epithelioma of the tongue coagulation offers the best results where either partial or complete amputation is necessary (Fig. 4). Hemorrhage is reduced to a minimum and shock avoided. The thrombosed condition of the blood vessels beyond the actual area of destruction is one of the factors which contributes to the rarity of secondary hemorrhage following operations by this method. As an added precaution, particularly in advanced cases, ligation of one or both external carotids is advised. Following the amputation it is of the utmost importance to keep down bacterial invasion by the free application of Dakin's solution, or one of its modifications, to the wound. This also tends to keep the affected tissues from maceration by the saliva. In these cases the lymphatic glands of the neck always receive radiation treatment whether metastatic involvement is evident or not. In advanced cases, and where the swelling of tongue and fauces renders

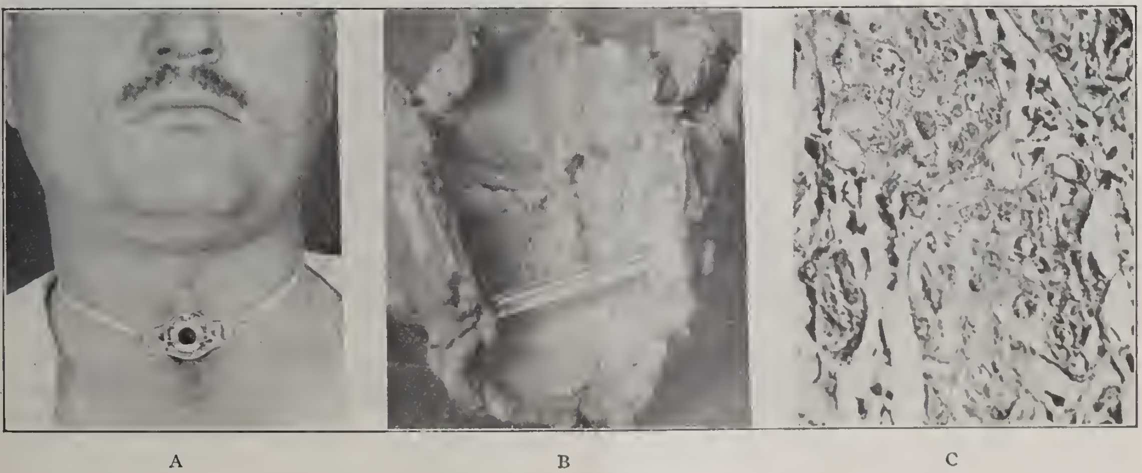


Fig. 5-A. Showing patient one year after complete laryngectomy for extensive squamous cell carcinoma of the larynx, with permanent tube in place. This operation had been preceeded and followed by radium treatment. This patient has learned to talk so well by training the muscles of his throat, that he recently addressed an audience and could be heard and understood by everyone in a large room. B. Gross appearance of the larynx after removal. C. Photomicrograph of section taken from this larynx.

swallowing difficult, we make it a practice to do a preliminary gastrostomy. Not only does the general condition of the patient improve when fed through the gastrostomy tube, but considerable reduction in the local swelling follows, rendering the operation somewhat easier, and giving a better prognosis.

We have seen very remarkable results in malignant disease of the tonsils obtained by radium needle treatment.

In malignant involvement of the larynx, our technic, generally speaking, is as follows: Tracheotomy, followed in about ten days by laryngotomy (longitudinal fissure) and desiccation of the neoplasm by direct vision, with perhaps the insertion of radium needles into, or the application of a radium capsule to, its base and surrounding tissues. The x-rays may also be employed from the outside. In very advanced cases, too extensive for desiccation treatment, laryngectomy should be done subsequently. Our experience, however, has been such as to convince us that a preliminary inspection and palpation through a laryngotomy opening should be made in every case, as only in this manner can the extent and exact position of the growth be ascertained. Also, a frozen section can be made of a piece of the growth and a diagnosis of the grade of malignancy arrived at within a few minutes. The decision as to the treatment can then be made with greater confidence. (Fig. 5.)

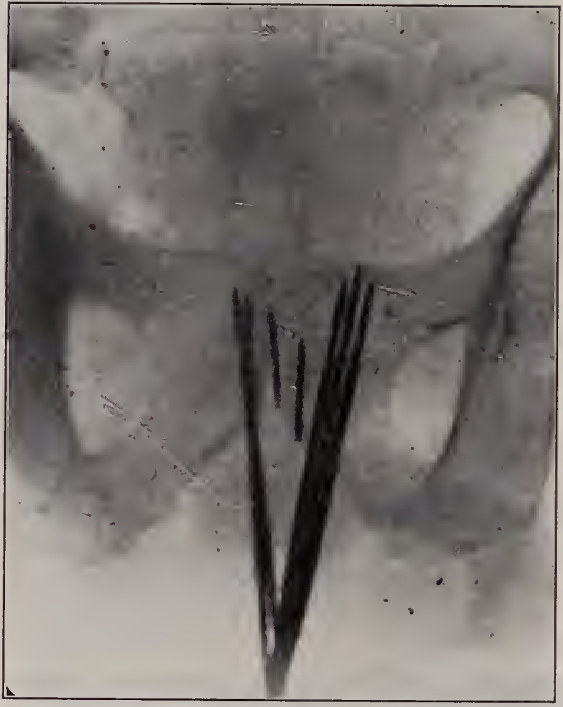
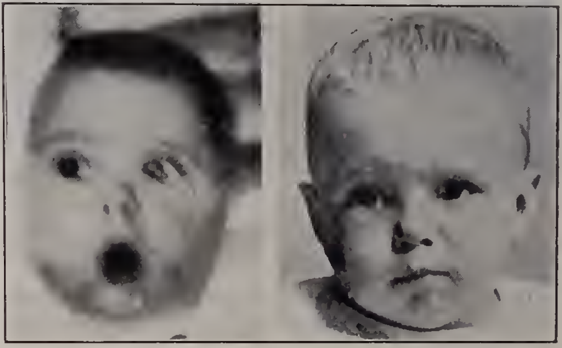


Fig. 6. Radiograph of radium needles inserted through the perineum into a malignant prostate gland. Short wave length x-ray treatment, from the outside, is administered through several portals. Good results are frequently obtained by this technic.

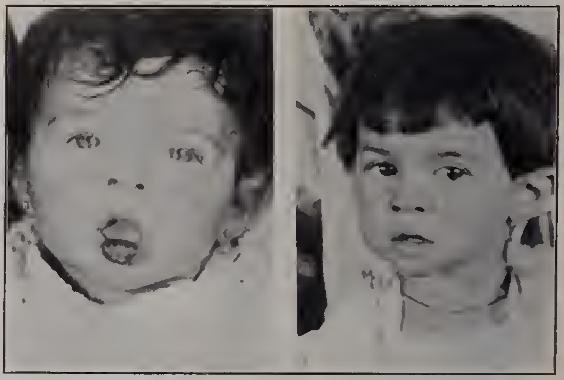
Localized malignant neoplasms of the rectum may be treated by desiccation or coagulation, followed by radiation therapy. In more advanced cases radium needles are used. Since metastasis to the liver and pelvic glands frequently occurs in cancer of the rectum, deep x-ray therapy is applied to all areas likely to be involved, from the liver downward.



A B

Fig. 7-A. Large cavernous angioma treated by electrocoagulation (see text). B. Showing result of treatment.

In a fairly advanced case of cancer of the pylorus, a preliminary gastro-enterostomy was performed. The pylorus was then stitched to the abdominal wall, and radium needles were inserted extraperitoneally into the growth in the pylorus, parallel with the serous membrane. Through and through sutures were inserted but left untied until the radium needles were withdrawn, twenty-four hours later. X-ray treatment was also given from the outside. The patient made an uneventful recovery and has remained free from disease for four years.



A B

Fig. 8-A. Angioma of the lower lip of a nursing child. B. Result obtained by radium treatment.

In cases of carcinoma of the bladder, our present practice is the employment of "deep" radiation, in small repeated doses.

In carcinoma of the prostate, radium needles are inserted into the gland and this treatment followed by x-radiation. (Fig. 6.)

To the general surgeon large cavernous angiomata offer an element of danger from hemorrhage, infection, etc., but here again the electrothermic methods find a field of great utility, reducing these dangers to a minimum. An illustration of this is the case of a child having a large cavernous angioma of the cheek. The skin over this tumor was uninvolved except for a small strawberry discoloration near the center of the area. The blood lake was coagulated through the center of the discolored area, and later the slough was withdrawn in pieces through the opening thus formed. The resulting scar was only slightly larger than the original discolored area. The lost tissue was subsequently replaced with granulation tissue, restoring the normal contour of the face. (Fig. 7.) Small angiomata may be entirely destroyed in one desiccation treatment, under local anesthesia, with good cosmetic effect. However, in the treatment of certain types of angiomata radium has many advantages. For example, those covering large areas or involving vital structures or when on the lip of a nursing child. (Fig. 8.)

If we appear deliberately to dwell more extensively upon the electrothermic methods than upon the others, it must not be understood thereby, that they are given preferment in choosing by what method a case shall be treated, but because, as an agent in the treatment of neoplasms, their efficiency is not, as a rule, sufficiently emphasized.

To reiterate, their advantages have been found to be: (1) immediate destruction of the neoplastic tissue cells in situ; (2) the carrying of the heat, by the current, to a depth in the tissue beyond that actually treated, thus assuring the destruction of any malignant cells which have been lying beyond the area which actually appeared to have been involved; (3) the practical elimination of either primary or secondary hemorrhage, as the blood vessels are thrombosed beyond the area of destruction; (4) for the same reason there is less risk of spread of metastatic elements through either the blood or lymph channels; (5) the minimum formation of contractile connective tissue, as will be explained in the section dealing with histopathology.

Radium element, in needles, has been used by us for many years, with increasingly beneficial results as experience has been gained. Needles containing respectively 1 mg., 3 mg., 8 1/3 mg., and 10 mg. each, have been used. Those containing 1 mg. have been discarded as the time factor was, of necessity, too prolonged. The others are in daily use, not only as needles, but in suitable cases, made up in flat or round containers.

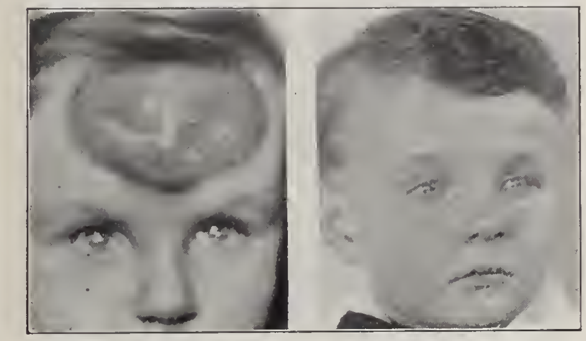

A B

Fig. 9-A. Nevus pigmentosus treated by the desiccation method. B. Showing good cosmetic result obtained.

The majority of cases suitable for radium therapy receive, in addition, treatment by the x-rays from different angles. Such are: breast cases where the tumor is comparatively localized, and with or without glandular involvement in the axilla, the supraclavicular region, the mediastinum, lungs, or vertebræ; malignant involvement of the cervix and adnexa; carcinoma of the rectum, postoperative treatment of metastatic glands in the neck, in cases of malignancy of the mouth, or neighboring parts, etc.

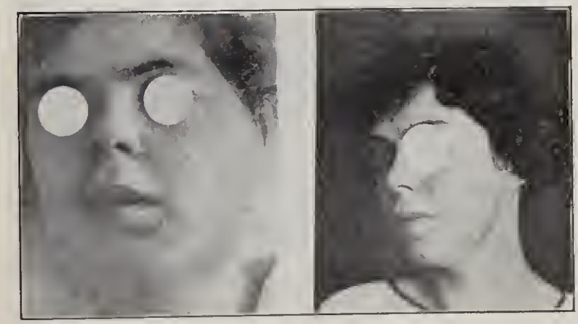

A B

Fig. 10-A. Extensive small round cell sarcoma involving cheek, parotid gland and mandible. B. Result of radium needle treatment with no recurrence in three years.

Care must be taken not to place the radium in too close proximity to bone, as this tissue is readily devitalized with the formation, subsequently, of a sequestrum. Should this latter result be desired, in the treatment of diseased bone, the size and thickness of the sequestrum may be much more easily controlled by the use of the desiccation of coagulation method, in which the intensity of the heat applied can be regulated with great accuracy. The degree of tissue sloughing can likewise be controlled and healing hastened. The aim with radium should be to produce retrogression of malignant tissue and not sloughing. When sloughing is desired the electrothermic methods are much to be preferred.

After critical comparison of the respective merits of radium needles and of bare emanation tubes, we have decided in favor of the needles, since they may be withdrawn after the treatment is finished, whereas the glass emanation tubes must remain permanently in the tissues, with subsequent irritating effects.

At the present time most of the x-ray therapy of malignant conditions is done with voltage ranging from 110 K. V. to 225 K. V. We have, in our hospital, for some time, used the following factors: 220 K. V., 4 ma., 75 mm. Cu. and 1 mm. AL. filter, 50 cm. distance, 80 minutes, to produce skin erythema. We have observed as good results, however, after reducing the time factor to 60 minutes, or less, in certain cases. We have no evidence that small doses of x-radiation produce stimulation of malignant tissue. The tendency, therefore, has been to lessen, rather than increase, our doses. As large portals as possible are used. It has, also, seemed to us that better results were obtained with 220 K. V. current than with anything lower. This, according to the physicists, is due to the greater quantity of "scattered" radiations produced in the tissue by the short-wave x-rays.

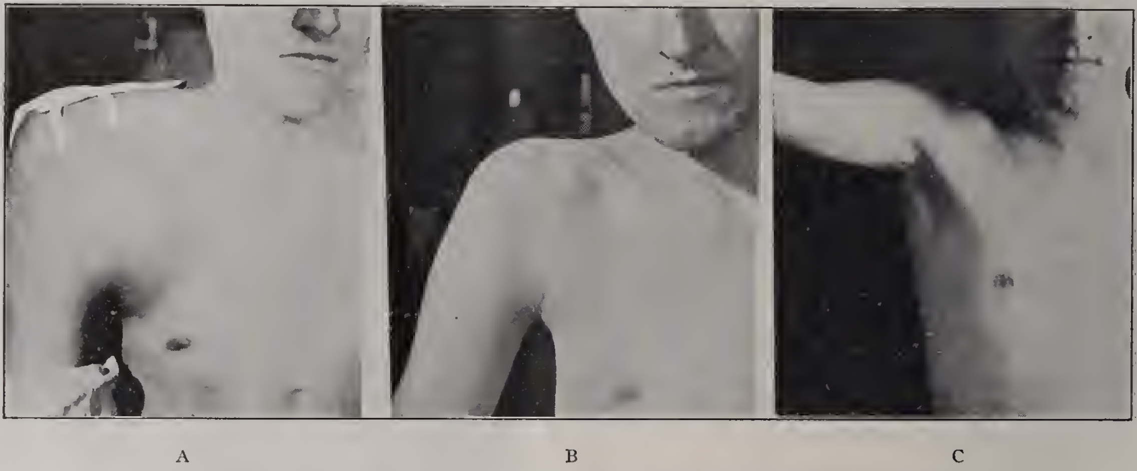


Fig. 11-A. Small round cell sarcoma of the shoulder, extending into the axilla, neck, and scapular region, involving shoulder joint with considerable impairment of motion. B. Appearance ten days after one short-wave length x-ray treatment through different portals. A radiograph showed considerable improvement in the joint. C. Appearance two months after x-ray treatment; total disappearance of sarcoma, regeneration of bone, permitting almost normal use of arm. This patient later succumbed to metastasis.

There is considerable controversy, at present, as to the merits, respectively, of large or small portals. In the treatment of abdominal tumors, in particular, many claim that small portals, only, should be used, in order to expose the intestinal mucosa to as little radiation as possible. Theoretically this is correct; i. e., if one could be sure of bringing under radiation cross-fire all the disease through these limited portals. In our experience, however, this has proved to be almost impossible, and we have found greater advantage to be gained by using large portals, and smaller doses, repeated at short intervals. The possibility of injury to the mucosa is reduced as much as possible by thorough cleansing of the intestines before treatment.

Here, also, as with other methods, only a few cases are considered to be suitable for x-ray treatment alone. Such are tumors of the abdominal viscera, mediastinum, etc. Most of our x-ray therapy is combined with other methods of treatment; for example, preoperative and postoperative radiation; again, following the use of radium in some pelvic conditions; or in breast involvement, after treatment by one or more of the other methods. Carcinomata of the mouth and neck seem to respond least readily to x-ray treatment. Tumors of any part of the thorax must be treated with great care by the high voltage method, owing to the danger of producing fibrotic changes in the lung, heart, etc. The avoidance of hyperirritation of the normal tissues surrounding a neoplasm is of the utmost importance. The present tendency to avoid carrying the dosage to the limit will reduce this danger considerably.

Heavy dosage became fashionable when the theory of "lethal dosage" was first introduced. While the amount of radiation received by the tissues is undoubtedly of great importance, it does not seem to us to be the one and only factor. We cannot but feel that we have in addition some immunizing factor which is of equal or even greater importance, and which may be rendered inactive by an overdose of x-radiation.

Histopathology: When speaking of surgery we generally mean the use of the knife. The histologic study of the tissues thus removed is limited, almost entirely, to diagnosis. The knife, acting merely as a mechanical factor in removing the mass, is not concerned with the destruction of the individual tumor cells. The histologic changes ensuing in the wound are such as are associated with the usual regenerative changes of a healing ulcer. On the other hand, radium, x-rays and the electrothermic methods, or the actual cautery, not only produce destruction of the individual cells, but by their peculiar action, induce certain cellular reactions which can be demonstrated histologically. Whether their action be biochemical or physicochemical has not been settled, but it may be definitely stated that all of them act as irritants. Their initial effect and end results have a common resemblance; namely, a degenerative passing on to necrosis and resulting in a fibrosis, differing from one another, however, in the type of the degeneration, the mode of the necrosis, and the nature of the fibrosis. This latter is of the greatest importance, as in many cases, it appears to be the type and degree of fibrosis which tends to limit, or destroy, the neoplastic cell elements.

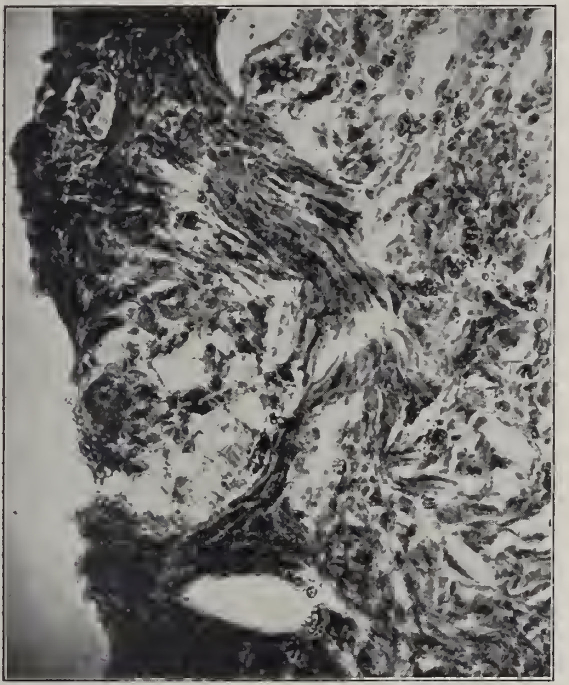


Fig. 12. Low power, basal cell epithelioma of cheek, treated with electrodesiccation, showing the characteristic appearance of the cells. The devitalized cells appear as long slender threads—"Mummification Necrosis."

In order to interpret clearly the histologic changes induced by the x-rays, radium and the electrothermic methods, and to correlate them with the clinical results obtained, it is desirable briefly to review some general pathological principles: (1) Any agent capable of causing a physicochemical upset in living tissue cells is an irritant. (2) All irritants eventually lead to degeneration and necrosis. (3) The degree of degeneration and the type of necrosis vary according to the mode of action, the intensity of the irritant, and the type of the tissue affected. (4) All necrotic tissue is eventually replaced by fibrous connective tissue. (5) The products of necrosis and degeneration tend to stimulate fibroblastic proliferation. (7) The amount and nature (density) of the connective tissue is determined, not by quantity only, but by the quality also, of the necrotic material. For example, a mild bacterial toxin tends to produce albuminous degeneration, while a more virulent toxin, such as diphtheria, leads to fatty degeneration. Again, cheesy necrosis resulting from tubercle bacilli infection is typical of this particular irritant. T. pallidum produces its characteristic necrosis, the gumma. The particular type of necrosis induced by these various irritants determines the nature and amount of connective tissue formed. Now, as already intimated, x-rays, radium, the actual cautery, and electrothermic methods, acting as irritants, induce intracellular degeneration, necrosis and associated fibrosis, their respective action differing, however, in the type of degeneration, and the quantity and qual-

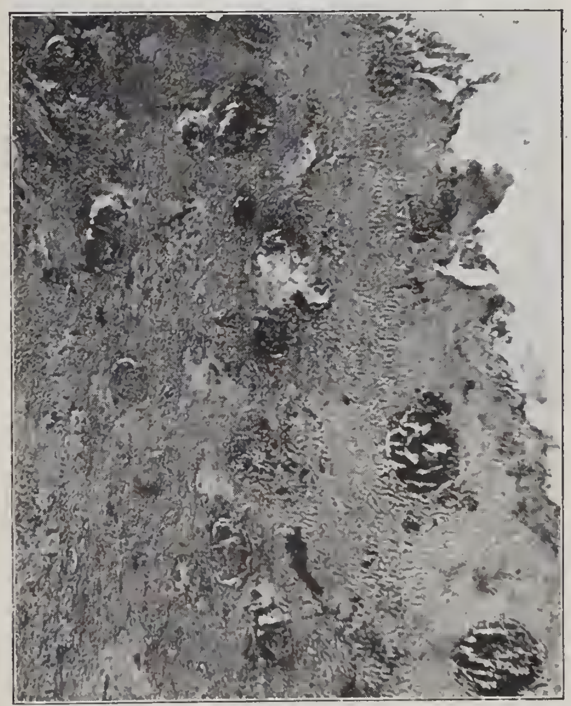


Fig. 13. High power, epithelioma of lip, treated with electrocoagulation. The tumor cells have lost their outline, appearing as a smooth homogeneous mass. The blood vessels are thrombosed.

ity of the resulting fibrosis. By the utilization of these agents in the treatment of neoplasm, it is intended not only to destroy the tumor cells but to cause the formation of a barrier of connective tissue around the tumor area, and thus to produce further destruction of the neoplastic cells. Such a connective barrier may, however, act as a two-edged sword if overdone, for while it may wall off a pathologic area, if overproduced, it will lead to devitalization of the neighboring normal cells. In such an event, it frequently happens that, as a secondary event occurring long after the treatment, we get a breaking down of the fibrous tissue itself.

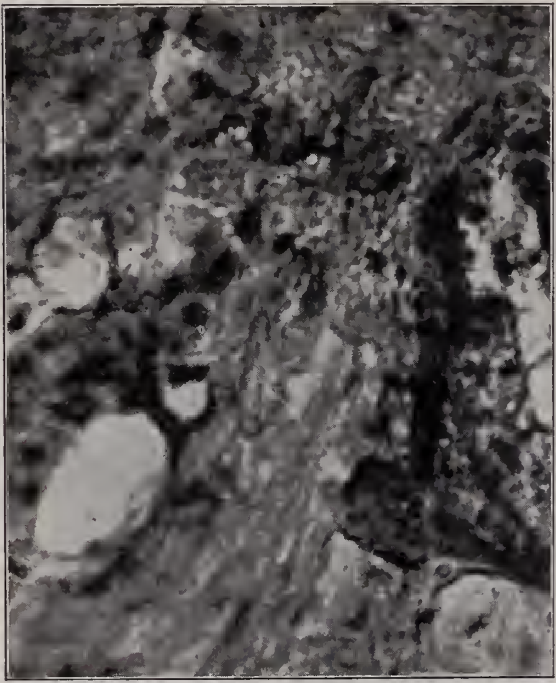


Fig. 14. High power, carcinoma of breast, treated with radium, showing various stages of disintegration of the tumor cells.

It is, therefore, of great importance to note the difference between these several therapeutic measures as seen in their end results. These differences are most conspicuous in the electrothermic methods, the actual cautery, following the use of radium element, and radium emanation in the form of bare tubes. Let us discuss them in the order named. Electrodesiccation, as the name implies, causes a drying up of the cells, there are no apparent preliminary degenerative changes. The heat generated in the tissues causes an evaporation of the fluid portion of the cells, and hence their shrunken and mummified appearance. (Fig. 12.) The cell protoplasm is condensed rather than disintegrated; thus the resulting fibrous tissue is less abundant and less dense and contractile. In electrocoagulation, where the intensity of the heat is increased we have, in addition to the drying effect, a coagulation of the protoplasm, with a proportionate increase in trauma of the cell elements. (Fig. 13.) We find, in consequence, a resulting increase in fibrous connective tissue formation. The actual cautery, although acting comparatively superficially only, produces a marked destructive effect of all the tissue elements, resulting in dense fibrous tissue formation and a contracted cicatrix.

When using radium we depend on the action of the beta and gamma radiations. When radium element is used in needles, practically all the beta radiations are screened off by the metal containers, and our results are due almost entirely to the gamma waves. Their action upon the tissue cells is a preliminary sensitization, and an associated degeneration and necrosis. The cellular elements affected undergo hydropic degeneration (Fig. 14); they appear swollen and distended, and soon show evidence of fatty degeneration. Eventually the cells disintegrate, necrosis is marked, and the resulting fibrous tissue is abundant and dense. When radium emanation is used in bare tubes practically all the beta rays reach the tissue, in addition to the gamma rays. The irritating effect is thus very greatly increased, and we get, as is to be expected, an increased degeneration and necrosis, followed by still greater fibrosis, and resulting quite frequently in such devitalization of the area involved, including the fibrosis, as to cause the formation of extensive sloughs with delayed repair.

SUMMARY

1. The etiology of cancer is still unknown.

2. The diagnosis can usually be made clinically, but the only positive method is by the examinations, under the microscope, of sections of the tissue. A quick diagnosis by frozen section is preferred. Care must be taken, however, that suitable sections are examined; otherwise an incorrect negative report may be the result.

3. The present methods of proven value for the treatment of cancer are: surgery, the actual cautery, electrothermic methods, radium and x-rays.

4. Surgery (the knife) removes the tumor, but has no effect on the individual cells.

5. The actual cautery destroys these cells, and the heat is carried only slightly beyond the area actually treated. Hemorrhage is considerably reduced, but owing to the degree of tissue destruction produced, a marked fibrosis results with considerable scarring and contraction. Keloid frequently follows.

6. The electrothermic methods, desiccation and

coagulation, possess all the advantages of the actual cautery, with the following additions: heat penetration is much greater (in fact this is under the control of the operator to a large extent); thrombosis of the neighboring blood and lymph vessels occurs, thus minimizing the danger of hemorrhage and metastasis; the results obtained with the electrothermic methods are so much superior to those following the use of the actual cautery that the latter is no longer used in our practice; as comparatively little cell destruction occurs, the resulting fibrosis is of a very moderate degree, resulting in soft, pliable scars; in many extensive "inoperable" cases the coagulation method gives excellent results; the desiccation method (monopolar) consists in the use of a high frequency current of high voltage and low amperage, and causes, by the mild degree of heat produced, a dehydration effect in the tissues; in the coagulation method (bipolar) a more intense heat is produced by using a relatively lower voltage and higher amperage and thereby causing not only a dehydrating effect but, also, a coagulation of the protoplasm of the cells.

7. Radium may be used in the form of the element or of emanation, either of which may be used in needles, capsules, etc., producing in the tissues a hydropic and later a fatty degeneration, with a resulting fibrosis which is abundant and dense. Emanation in capillary glass tubes, which are buried in the diseased tissues, produces severe fibrosis, and is often followed by pain and the formation of extensive sloughs which greatly delay healing. We prefer to use the element in needles.

Short-wave length x-rays are employed. These appear to have a greater action on the neoplastic tissue then on the normal cells, and fibrosis is produced. Care must be taken not to injure the surrounding normal tissues. Our practice is, therefore, to give considerably smaller doses than has generally been the custom in the past.

9. Each of these methods possesses valuable properties and may be employed alone in the treatment of certain conditions, but quite often it is considered best to use two or more of them in combination in order to obtain the best results.

2215 Walnut Street.

EDITORIAL

THE PLUMBER AND THE CHIROPRACTOR

It remained for a young man in Wilmington to establish the close relationship between these two professions. There lives in that city a plumber, Joseph Hackendorn. His business, though lucrative enough, was not sufficient to supply him with all the money he wanted to have. He was estranged from his wife, and such relationships usually mean added expenditures outside the family hearth. He decided on a change of business. In some way the possibilities of chiropractic were brought to his attention, and visions of great opulence fired his imagination. True, he lacked education and had not the remotest notion of the practice of the healing art, but he could manipulate "joints" and possessed one qualification, which apparently was all that was needed: he knew how to charge. He then took a six months' correspondence course in chiropractic, and, according to his lawyer who defended him in a suit for nonsupport, opened an office and waited for patients to come. They came, and those that came were properly adjusted, according to the tenets of the two professions. But, alas! The fish did not bite as our friend Hackendorn expected. The number were few and far between, and in the language of his attorney, "he was forced to close up and go back to his more lucrative employment."

These, then, are the men who claim to have wrested a secret from Mother Nature, who demand the right to treat disease, and blatantly proclaim their "cures." What a sad reflection on human intelligence that it permits and encourages a Hackendorn to minister to the physical ills of the public. A. R.

BOOKS RECEIVED

National Health Series. 16mo., full flexible Fabrikoid. Average number of words per volume, 18,000. Price per volume, 30 cents. Complete set of 20 volumes (ready about May 1, 1924) $6.00. New York: Funk & Wagnalls Company, 354-360 Fourth Avenue.

Pennsylvania Trees. By Joseph S. Illick, Chief, Office of Research. Bulletin II (Fourth Edition). Pennsylvania Department of Forestry, Robert Y. Stuart, Commissioner, May, 1923.

Scientific Rejuvenation Without Operation. By H. H. Rubin, M.D., Director of the American Institute of Radiendocrinology. Published by Medical Science Publishing Co., 7 East 43d St., New York City.

Social Control of the Feebleminded. A study of social programs and attitudes in relation to the problems of mental deficiency. By Stanley P. Davies, Ph.D., Executive Secretary, Committee on Mental Hygiene, N. Y. State Charities Aid Association. The National Committee For Mental Hygiene, Inc., 370 Seventh Ave., New York City, 1923. Price $1.25.

The Surgical Clinics of North America, (Issued serially, one number every other month). Volume IV, No. 1, Philadelphia Number (February, 1924). 302 pages with 90 illustrations. Per Clinic year, paper $12.00; cloth $16.00 net. Philadelphia and London: W. B. Saunders Company.

Abt's Pediatrics. By 150 specialists. Edited by Isaac A. Abt, M.D, Professor of Diseases of Children, Northwestern University Medical School, Chicago. Set complete in eight octavo volumes totalling 8,000 pages with 1,500 illustrations, and separate Index volume free. Now ready—Volume III, containing 1,051 pages with 223 illustrations. Philadelphia and London: W. B. Saunders Company, 1924. Cloth $10.00 per volume.

The Circulatory Disturbances of the Extremities, including gangrene, vasomotor and trophic disorders. By Leo Buerger, M.A., M.D., New York City. With 192 illustrations, five in colors. Philadelphia and London: W. B. Saunders Company, 1924. Cloth, $8.50 net.

The Antidiabetic Functions of the Pancreas and the Successful Isolation of the Antidiabetic Hormone—Insulin. By Prof. J. J. R. Macleod and Prof. F. G. Banting. Series No. 2 of the Beaumont Foundation Lectures under the auspices of the Wayne County Medical Society, Detroit, Michigan, 1923. Published by The C. V. Mosby Company, St. Louis, Mo. Price $1.50.

Methods in Medicine. The manual of the medical service of George Dock, M.D., Sc.D., formerly Professor of Medicine, Washington University School of Medicine. By George R. Herrmann, M.D., Ph.D., Instructor in Medicine, University of Michigan. Illustrated. St. Louis: The C. V. Mosby Company, 1924. Price $6.00.

International Clinics. A quarterly of illustrated clinical lectures and especially prepared original articles by leading members of the medical profession throughout the world. Edited by Henry W. Cattell, A.M., M.D., Philadelphia. Volume I, 34th Series, 1924. Philadelphia and London: J. B. Lippincott Company.

Applied Pathology in Diseases of the Nose, Throat and Ear. By Joseph C. Beck, M.D., F.A.C.S., Associate Professor of Laryngology, Rhinology and Otology, University of Illinois College of Medicine; Chief of Staff, Otolaryngology, North Chicago Hospital, Chicago. With 268 original illustrations, including 4 color plates. St. Louis: C. V. Mosby Company, 1923. Price $7.50.

Diet for Children (and adults) and The Kalorie Kids. By Lulu Hunt Peters, A.B., M.D., author of Diet and Health, With Key to the Calories. Formerly Instructor on Infant Feeding, Los Angeles County and Clara Barton Hospitals, Los Angeles Medical Department, University of California. New York: Dodd, Mead and Company, 1924. Price $2.00.

BOOK REVIEWS

GERIATRICS. A treatise on the prevention and treatment of diseases of old age and the care of the aged. By Malford W. Thewlis, M.D., Editor of *Medical Review of Reviews;* Associate Editor, *The Therapeutic and Dietetic Age.* With introduction by A. Jacobi, M.D., LL.D., and I. L. Nascher, M.D. Second Edition, revised and enlarged. Octavo of 401 pages, with 24 illustrations. St. Louis: C. V. Mosby Company, 1924. Price $4.50.

Whoever originated the hackneyed "Youth will be served," after reading Dr. Thewlis' entertainingly instructive book, would have added, "and old age will be neglected," and those agitators of the present era who are overfrenzied in efforts to invent and discover new measures to aid and stimulate an already too much coddled and spoiled youth would devote a respectable portion of the time and effort uneconomically so employed, in the conservation of the useful old, whose wealth of experiences gathered in years more active is of incalculable value to the rest of humanity.

The medical profession must also after reading its indictment in the easily read, graceful style of the author, almost entirely, shamefacedly admit that it has been equally indifferent. Hearken to the author: "Medical neglect of the aged is as general as is the public neglect. Here and there some physician thoroughly imbued with the principles of the medical profession, sympathy and science, has made a study of the aged in health and in disease, has recognized the great difference between maturity and senility, and has devoted himself to the care of the aged. But the great mass of the medical profession is still indifferent to their welfare."

Henry Dandolo, Doge of Venice, at 84, was admiral of its fleet when it was mistress of the sea, capturing impregnable Constantinople, and refusing the throne of the Eastern Empire unanimously offered by the French and Venetians. In the Peru of the Pizarros, Francis Carbajal, a veteran of 40 years' service in the wars of Charles V., in the saddle at 84, gained the battle of Huarina, by his strategic efficiency converting the rout of the last of the Pizarros into victory—probably the greatest engagement ever fought in South America. On the other hand, one considered by many to be the greatest mind in the United States of to-day, is not considered good Presidential timber, because, forsooth, "he is too old." Contrast Britain with a Gladstone four times premier in old age!

The author, a pioneer and one of the foremost specialists in geriatrics, (for if pediatrics, why not geriatrics?) from his rich experience details and discusses numerous cases. The chapters are short, not one exceeding nineteen pages, and embrace the conditions and diseases found among the senile. Treatment of the various affections is given in an admirably painstaking manner, comprising drugs, opotherapy, electrotherapy, radium therapy, and Roentgen therapy. There is a very interesting chapter devoted to functional recuperation from senile paralysis. Dosage is generally given in all forms of therapy, many prescriptions presented, and diathermia is not neglected.

Considering the ease with which this well printed and cleverly written book can be read (the first sixty-five pages were covered by the undersigned in two hours' time, and the entire work in the space of twelve hours during spare moments), it is well designed to merit the attention of every one interested in the care and treatment of the senile, and what medical or surgical mind is not?

Additional chapters appear in this edition on electrotherapy, opotherapy, senile heart disease, asthma, emphysema, influenza, rheumatism, pruritis senilis, and hepatic cirrhosis. "Keep senile cases out of bed" is the author's geriatric keynote, inculcated throughout the whole volume, and the diagnostic placebo, "old age," is relegated to the scrap heap of ignorances. A valuable bibliography, forming a comprehensive geriatric library, of interest to those who are desirous of wider knowledge of the subject—and this can with great difficulty be avoided after a complete reading of Dr. Thewlis' fine presentation—precedes the very complete index that concludes the book.

Aside from the practical professional importance to the reader, the latter, if old, will cease to regard senility as his death warrant and will no longer refrain from following occupational activities germane to his period of life, and the mature will not fear to attain old age, formerly dreaded as so useless and as totally undesirable, after digestion of this truly humanitarian, uplifting tome. H. P. A.

DISEASES OF THE NERVOUS SYSTEM. A textbook on Neurology and Psychiatry. By Ely Jelliffe, M.D., Ph.D. and William A. White, M.D. Fourth edition, revised, rewritten and enlarged. Philadelphia and New York: Lea & Febiger, 1923.

The authors present throughout the entire work a new conception of the principles underlying disease of the human body and modifications of human behavior. They offer in a philosophical manner certain fundamental considerations in this book. It is not only a work on the nervous system, but the authors offer a general viewpoint from which to regard all

(Continued on page xiv.)

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ORIGINAL ARTICLES

SYMPOSIUM ON SINUS THROMBOSIS

THROMBOSIS OF THE CAVERNOUS SINUS*

G. E. DE SCHWEINITZ, M.D.
PHILADELPHIA, PA.

Noted at an autopsy in 1821 by A. Duncan, clinically reported eighteen years later by Vigla, but first clearly described by H. Knapp, in 1868, cavernous thrombosis is a comparatively rare condition. In 1918, when Dorland Smith[1] wrote a thesis on this subject, reporting five observations of his own, he estimated that approximately 300 cases were on record, and J. Julian Chisolm and Shelton Watkins[2] found only eight cases in 50,000 of the surgical records of Johns Hopkins Hospital from 1889 to 1919.

American contributions on this subject have been particularly interesting. E. W. Dwight,[3] in 1900, performed the first operation on the cavernous sinus; but the patient survived only a few hours. In the same year Frank Hartley, at the request of Dr. Herman Knapp, whose patient had an orbital sarcoma, which was followed by the formation of an "aseptic thrombosis" of the sinus, operated successfully by a modification of Krause's method of reaching the gasserian ganglion, in the sense that the patient lived two and one-half months, the cause of death being an extension of the neoplasm.

Other well-known contributions are those of H. G. Langworthy,[4] who, in addition to a complete paper on this subject, has reviewed it in the American Encyclopedia of Ophthalmology (1913), of Edward Jackson,[5] of H. P. Mosher,[6] who has devised one of the operative procedures, of Dorland Smith[1] and of J. J. Chisolm and S. S. Watkins,[2] to whose excellent articles reference has been made. Among English publications Sir St. Clair Thomson's[7] essay is noteworthy, and Herman Knapp's[8] article published in Germany in 1868, remains to-day a classic contribution.

All of these publications except Mosher's contain bibliographies, and are mentioned, not with any idea that they constitute a review of the literature, which in special papers and scattered articles is a very large one, but for the convenience of those who may wish additional information.

Causes and Anatomic Relations: Bacteriology: Systematic writers have classified cavernous sinus thrombosis into those cases which (1) depend upon "debilitating conditions," and which may occur in very young life, or in old age — the so-called *marasmic types* — and which, according to MacEwen (quoted by Chisolm and Watkins), are never primary, but follow an involvement of the longitudinal or lateral sinuses, a statement, however, which meets with an exception in the case reported by Zentmayer and Weisenburg;[9] (2) those which are due, for example, to fracture of the skull, direct injury from wounds through the orbit, or to a gasserian ganglion operation, as described by Cushing and referred to by Chisolm and Watkins, to operations in the pituitary region, and to foreign bodies lodged in the sinus, for instance, a piece of shrapnel, as in a case which I observed during the war—the *traumatic types;* (3) those due to infection, usually secondary to a thrombophlebitis of an afferent or efferent vein, but also primarily due to extension from meningitis, or a suppurating area in the sphenoid or temporal bone.

Evidently the thrombotic process may be *septic* —the most common form—or *aseptic,* a purulent condition being absent. One or both sinuses may be involved, the bilateral process being a frequent one.

Avoiding anatomic details, it may be said, in order to refresh our memories, that the cavernous sinus is a paired sinus, which passes along the sides of the body of the sphenoid bone from the sphenoidal fissure in front to the apex of the petrous portion of the temporal bone behind, being about 2 cm. in length and traversed by numerous trabeculæ. Along the inner wall pass the internal carotid and the sixth (abducens) nerve, and along the outer wall are the third

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* Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 3, 1923.

(oculomotor), fourth (trochlear), and ophthalmic division of the fifth nerve.

The anatomical venous connections of the cavernous sinus are elaborate and well known. Because of such connections, there are many areas which, if they contain foci of infection, may send their septic products to the sinus, leading thus to thrombosis. These have been admirably classified by Chisolm and Watkins, as follows:

"1. *Ears and Mastoid.*—The sigmoid sinus and jugular bulb are connected with the cavernous sinus through the superior and inferior petrosal sinuses, respectively. These sinuses also connect the various smaller veins of the external, middle and inner ear, and the mastoid with the cavernous sinus.

"2. *Face.*—The facial vein is connected with the cavernous sinus by many anastomoses. It anastomoses with the angular vein, the supra-orbital and infra-orbital veins, the superior and inferior ophthalmic veins, the nasal veins, the facial communicating vein, and the pterygoid plexus, all of which either directly or indirectly communicate with the cavernous sinus.

"3. *Orbit and Eyelids.*—The ophthalmic vein drains the eyeball and through the angular vein the upper lid, and the palpebral branches of the facial vein drain the lower lid. The ophthalmic veins empty directly into the cavernous sinus. The palpebral veins communicate with both the angular and temporal veins.

"4. *Nose and Accessory Nasal Sinuses.*—The angular vein, the nasal veins, the anterior and posterior ethmoidal veins, and some of the sphenoidal veins empty into the superior ophthalmic vein and thence into the cavernous sinus. Veins from the sphenoidal sinus may also empty directly into the cavernous sinus.

"5. *Mouth and Pharynx (including the teeth and tonsils).*—Various veins of this region empty directly or indirectly into the pterygoid plexus, which is connected with the cavernous sinus through the vein of Vesalius and veins through the foramen ovale and the foramen lacerum medium.

"6. *Neck and Scalp.*—The veins of these regions are connected with the cavernous sinus indirectly through the various veins of the diploë—the emissary vessels, and the occipital and posterior auricular veins."

The *bacteriologic investigations*, as far as reported, have shown the usual elements—staphylococcus albus and aureus, pneumococcus, diplococcus intracellularis, and, as in a recent case recorded, but not yet published, by Warren Reese, the streptococcus hemolyticus.

Particularizing, it may be stated that the infection may proceed (1) from infected scalp wounds, independently of fracture of the skull, and from the neck, for instance, in association with a carbuncle; (2) from the eyelid, because of furuncles, styes, pustules, malignant and otherwise; from infected wounds and erysipelas; from the facial area, including the root of the nose, as the result of pimples, pustules and infected and neglected wounds, and erysipelas; from ulceration of the mucous membrane of the nose; from infected hair follicles, aggravated by picking and plucking out the cilia; from the paranasal sinuses, especially the sphenoid and ethmoid, but not excluding the frontal sinus, or the antrum; from buccal infection, that is, tooth-root abscess, carious teeth and maxillary periostitis; from the pharynx, for instance, retropharyngeal abscess; from septic tonsils, and rarely as a sequel of tonsillectomy, one such case being reported by Chisolm and Watkins; from the ears and mastoid, especially suppurative otitis media and mastoiditis; and from the orbit as the result of cellulitis, abscess and periostitis.

Intracranial areas of infection from which direct extension may take place are brain abscess, meningitis, sphenoiditis and disease (caries) of the petrous portion of the temporal bone.

According to Sir St. Clair Thomson, next to disease of the sphenoidal sinus, pyogenic infection from the ear is the most common cause of thrombosis of the cavernous sinus, and this statement corresponds with the recorded experience of many observers. The predominance of aural disorders as an etiologic factor in this respect has been investigated by Dorland Smith, who in an analysis of 140 cases found that the original source of infection was: ears, 40 per cent, orbit and face, 35 per cent; mouth and throat, 13 per cent; nose, 9 per cent; other causes, 3 per cent. But a greater incidence of ear disease, as compared with other causes in small series, is not always manifest. Thus, in five cases reported by Dorland Smith, not one could be attributed to infection from this region, and this is also true in the Chisolm-Watkins series (12 cases). In five cases personally observed, two were of aural origin. Foci of infection in the orbit and facial area are responsible for a large contingent of these cases, almost equaling that from the aural region. It has been a matter of comment, as it is of importance, that these foci on the face, lids and nose may be insignificant—a small pimple, a trifling infection of a hair follicle within the nasal aperture, a stye or little pustule on the palpebral margin.

Symptoms: From the general standpoint the symptoms of septicemia may be present—chills, a septic temperature, nausea and vomiting, mental disturbances and coma. Usually the leucocyte count is high, and although the fluid obtained by lumbar puncture may be clear, if meningitis is a complicating factor it will be cloudy, and is, indeed, one of the important indications as to whether there is coincident meningeal inflammation. Naturally, the reverse may be true, that is, cavernous thrombosis may occur during a general sepsis or pyemia as a complication.

The other symptoms, largely ocular in their manifestations, are due to venous stasis and to involvement of the nerves which pass through the sinus. Early or prodromal symptoms may be headache, often severe, with or without fever, pain in and around the eyes and in the teeth, diplopia and "cold in the head." Increasing exophthalmos with edema of the lids, face and root of the nose and of the conjunctiva supervene, first one side, and soon (in over half of the cases) on the opposite side, in most instances within thirty to forty-eight hours.

Ptosis of paralytic origin is frequent, although it may be difficult to decide whether the drooping of the lid is due to third nerve palsy, or to edema. According to the muscles involved, there may be divergent or convergent strabismus, and finally, complete fixity of the eyeball, when all the nerves, third, fourth and sixth, are implicated. There is some evidence available that early diplopia is due to paresis of the trochlear nerve (Langworthy). The pupils are soon dilated and fixed.

Ophthalmoscopically, conspicuous signs are edema of the retina and great distention and tortuosity of the retinal veins. A true optic neuritis indicates orbital involvement (thrombophlebitis of the orbital veins), but more often the appearances are those of papilledema, that is, moderate choked disc. The statement that ophthalmoscopic symptoms are absent in about half of the cases (A. Knapp) should almost certainly read "were not observed" in that proportion of the cases. Sometimes, owing to early clouding of the media, ophthalmoscopic investigation becomes difficult or impossible, and sometimes examination according to this method was imperfect, although quite early in the affection, and especially if the ophthalmic veins are patent, even the distention of the retinal veins may be absent. In all patients personally examined, disc and retinal edema were conspicuously present. A true so-called apoplexy of the retina practically, indeed probably, never occurs, but retinal hemorrhages have been noted. In one patient under my observation, a girl of ten years of age, the sinus thrombosis being of aural origin, in addition to papilledema, there were many large retinal hemorrhages. So far as I am aware, no cases have been investigated by means of slit-lamp ophthalmoscopy. Should this method be available, it is probable differential points between optic neuritis and choked disc would be discovered, as well as changes in the vitreous, as they have been noted by Koeppe in papilledema and papillitis from other causes.

Implication of the fifth nerve causes anesthesia of the cornea, and this membrane, even early in the disease, may become cloudy and ulceration may develop (exposure-keratitis). Vision is degraded, according to the severity of the optic nerve and retinal involvement. The fields of vision thus far charted have shown no changes of diagnostic significance, that is definite indications of chiasmal involvement, unless a case reported by Seggel constitutes an exception to this statement. Naturally, if the process, as Dorland Smith points out, extends from the cavernous sinus to the orbit, the general symptoms of sinus infection previously detailed precede the local or orbital ones, and in this respect render an early recognition of the sinus involvement easier than if the reverse is true, that is, if the thrombosis originates from a previous orbital cellulitis.

Diagnosis and Differential Diagnosis: In the presence of the signs already detailed, notably cerebral symptoms, septic temperature, exophthalmos with lid and face edema, spreading to the opposite side within forty-eight hours, anesthesia of the cornea, implication of the motor nerves of the eyes and retinal edema and distention of the retinal veins, the diagnosis of infective cavernous sinus thrombosis is practically certain. Indeed, bilateral involvement, so frequently present (only 31 cases of unilateral thrombosis in 134 autopsies collected by Dwight-Germain, quoted by Dorland Smith) is of itself highly suggestive; sometimes, however, orbital cellulitis is bilateral. Edema over the mastoid and of the pharynx may be present.

In those instances of the affection where the thrombosis is limited to one side, it should be differentiated from orbital cellulitis tenonitis, erysipelas of the lid with orbital involvement, and thrombophlebitis of the orbital veins, and arteriovenous aneurism.

Certain systematic writers, for example, Langworthy, refer to injuries, for example, fractures, at the base of the skull, operations on the gasserian ganglion and the hypophysis and the sphenoidal sinus, and growths in the middle fossa of the skull, as possible etiologic factors. In point of fact, as previously stated, an operation on the gasserian ganglion has been followed by a thrombosis in this region. I have published an account of a tumor in the middle fossa of the skull, with marked exophthalmos, which unquestionably was due to the pressure of the growth against the sinus, but which for a long time was supposed, on account of the induration in the back of the orbit, to be due to an intraorbital growth. In these cases, however, as Smith points out, the history and the rate of development and the usual absence of a septic temperature, are satisfying indications that a septic thrombosis of the sinus was not present.

In ordinary unilateral orbital cellulitis there is an entire absence of cerebral symptoms, unless perchance extension takes place into the meninges, when the process becomes one of the causes of a septic thrombosis. In the latter circumstances the temperature before referred to will be apparent, and as Watkins and Chisolm have pointed out, a lumbar puncture bringing to light a cloudy fluid would indicate whether meningitis was present or not.

It is difficult to understand how arteriovenous communication, that is, a communication between the internal carotid and the cavernous sinus, could be mistaken for a thrombus in that region. The bruit and the pulsation should at once determine the nature of the lesion.

Occasionally a tenonitis is bilateral, as in a recent case under observation, and there may be very decided exophthalmos, enough, perhaps, to limit somewhat the movements of the globe, but there are no mental disturbances, and no characteristic temperature curve. It is hardly necessary to refer to the fact that periostitis of the orbit, panophthalmitis, enlargement of the lachrymal gland, and the exophthalmos associated with paranasal sinus disease present symptoms of their own which vary so from those of infected sinus thrombosis that a mistake ought to be impossible.

It is not the purpose or function of the present paper to refer to treatment in any detail, and one may simply mention the fact that although the prospects of operative interference are not brilliant, one or other of the various methods which have been devised for an approach to the sinus region ought to be taken into consideration, as affording at least some prospect of relief, inasmuch as nearly all cases of *septic* thrombosis (there are a few exceptions) have proved fatal. Indeed, Dorland Smith, after his conscientious study of the whole matter, concludes that surgical measures are indicated, and that the cavernous sinus should be drained if a definite diagnosis can be made before the patient becomes too septic. It will be remembered, however, that Drs. Chisolm and Watkins observed one case of recovery in these circumstances without operation, and that they also point out that if the examination of the spinal fluid reveals the presence of meningitis, mere drainage of the cavernous sinus is not sufficient, and that if the spinal fluid is clear, there is some chance of recovery, without operation.

In so far as the writer's personal experience is concerned, five cases of this affection have come under personal observation:

(1) An old woman from whom history was unobtainable, who unquestionably had bilateral thrombosis of the cavernous sinus, but probably of the marasmic type, and therefore not specially concerned in the present discussion. Exophthalmos, and fixity of the eyeballs were present, but no septic temperature. Death occurred from "inanition." Autopsy was not permitted.

(2) A boy with bilateral sinus thrombosis following disease of the middle ear, with probable mastoid involvement. All the classical symptoms were present, with advanced sepsis, and death occurred, but autopsy was not permitted.

(3) A case of a young girl, aged 11, with rapidly developing bilateral exophthalmos, ptosis, fixity of the eyeballs, huge enlargement of the retinal veins, with hemorrhages and disc-edema. The focus of infection was in the middle ear. The patient was decidedly septic when seen, and death occurred. No autopsy was permitted.

(4) A young woman, about twenty, with a similar set of symptoms, the infection having taken place from a small boil which occurred at the facial area. Death ensued; autopsy not permitted.

(5) A woman whose orbit was explored in the belief that there was an orbital growth present to account for the exophthalmos. None was found, and following the operation symptoms developed which indicated the presence of a sinus thrombosis, and death was the result.

All of these cases were seen in consultation, and in none of them was the condition at the time the examination was made of such a character that the faintest hope of any good result from operative interference could be entertained.

As this communication is chiefly concerned with acute, that is, septic, thrombosis, and has largely disregarded chronic and aseptic types of the disease, no detailed reference has been made to the cases which exhibit intermittent exophthalmos and swelling, gradually subsiding proptosis and edema, even though the termination may be fatal, and the effect of the establishment of collateral circulation has been included. But we should be interested in an endeavor to fix attention upon early symptoms of this disease, or, more accurately, this lesion, in order that we may "interfere," as Dr. Dorland Smith points out, "before the patient becomes too septic." I suspect that early diplopia should be taken into consideration — the diplopia characteristic of trochlear nerve implication is probably important, as Langworthy suggests. Jackson says "swelling and exophthalmos will almost invariably be present, constituting the first definite evidence of involvement of the sinus." But he also is not unmindful of early disc edema, and I quite agree with him that fundus changes are probably present even in early stages in "nearly all cases." Ophthalmoscopic examination, at reasonable intervals, of patients with otitis media, especially if headache, eye or tooth pain, intermittent it may be, develops, and careful search for diplopia are indicated. But not alone in cases of ear disease. Again I permit myself to join with those who have emphasized that the source of a thrombosis may be a very insignificant one, to wit, a small boil in the facial area, a similar boil inside of the nose, an infected wound in the scalp. We are so apt to associate this very serious complication with ear disease that minor etiologic factors in the sense of foci of infection run some danger of being disregarded.

Finally, I suspect, although I have had no chance to justify, practically, my suspicion, that a very early symptom is faint edema of the corneal epithelium, as the slit lamp would reveal it. This is certainly true in some cases of sinus disease, and I am sure antedates the breaking down of the corneal layers in cases of neuroparalytic keratitis following excision of the gasserian ganglion. Why should it not be true in beginning pressure on the fifth pair in the early stages of sinus thrombosis?

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ETIOLOGY AND DIAGNOSIS OF LATERAL SINUS THROMBOSIS*

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The consideration of an intracranial lesion in all its complexities, especially the differential diagnosis, which is often so difficult and at times quite impossible, may be materially aided, oftentimes, by careful study of the causal or underlying diseases. From the viewpoint of otolaryngology, and perhaps that of ophthalmology also, endocranial disease is mostly secondary in its etiology and development, the symptoms appearing during or shortly after another ailment. In view of the extremely thin plate of bone that separates the lateral sinus and the interior of the skull from the infective processes involving the middle ear and mastoid, one wonders at the relatively infrequent intracranial complications. This is emphasized by the fact that, barring tubercular meningitis, traumatism and cerebrospinal meningitis, the great majority, perhaps seventy-five per cent, of all intracranial lesions are secondary to an aural disease.

This paper deals with the etiology and symptomatology of otitic sinus thrombosis. However, given a case of either acute or chronic otorrhea or suppuration of the nasal accessory cavities, various endocranial sinuses may become involved, brain abscess or meningitis may develop, or any two or all may be present at the same time.

Simple, uncomplicated cases of any one of the three should not be very difficult of diagnosis; especially is this true of otitic sinus thrombosis. Not infrequently, however, some associated ailment serves to obscure a definite diagnosis. For instance, Kernig's sign is of little diagnostic value, except that its presence in sinus thrombosis will serve to indicate meningeal involvement, especially of the pia mater, which in turn should, in the presence of other symptoms, materially emphasize the importance of the early surgical aspect of these cases.

The superior longitudinal sinus receives its supply of blood from the superior cerebral and the inferior cerebral veins. The superior petrosal and lateral sinuses receive blood from the inferior cerebral veins. The cavernous sinus receives blood both from the inferior cerebral veins and the middle cerebral vein. The inferior petrosal sinus joins the sigmoid sinus and forms the internal jugular vein. The sigmoid sinus also receives blood from the occipital and superior petrosal sinuses. Some small veins from the middle ear and mastoid join the sigmoid sinus at the knee, which is the usual point of the initial lesion. The mastoid emissary vein joins the sigmoid sinus from the posterior central border of the mastoid process, and is frequently thrombosed secondarily. Primary thrombosis of the jugular bulb develops directly through the tympanic floor or as the result of a dehiscence.

The lymphatics also play an important part in the pathology and symptomatology of sinus thrombosis and must receive due consideration.

It will be seen from this brief anatomical review of the venous circulation of the brain how readily the infection of a given sinus can be conveyed to another through their intercommunication. It may even extend to the transverse sinus of the opposite side or involve the longitudinal sinus. It would seem that secondary cavernous sinus thrombosis should be more common on account of the direct communication with the sigmoid sinus through the superior and inferior petrosal sinuses, or this process could be reversed with equal facility.

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Thrombosis is defined as the formation of a mass or plug, eventually becoming solid, from certain changes in the constituents of the blood by coagulation and agglutination. The type to be considered here is the inflammatory, or that secondary to adjacent carious bone, which favors the entrance of infective material through the vessel wall, or through the contributory circulation in those rapidly developing cases where osseous erosion has not yet occurred. The bone involvement may extend by contiguity to the walls of the sinus, the latter undergoing characteristic changes, later invading the blood stream, with consequent thrombosis. The sinus may be involved also through the internal auditory vein and the labyrinth, as well as through the inferior and superior petrosal sinuses.

A thrombus becomes septic by the introduction of infective microörganisms, such as the pneumococcus, streptococcus, staphylococcus, and the bacillus mucosus capsulatus, by way of the small veins and lymphatics through the diseased bone to the vessel wall, thus starting a phlebitis and subsequently the thrombotic process. The endothelium becomes swollen, then desquamates; this is followed by coagulation and agglutination. When the deposit of fibrin, which does not seem to be a constituent of normal blood, occupies but one side of the vessel wall, it constitutes a mural or parietal clot, whereas an obstructing thrombus is present when the entire circumference of the vessel is blocked. It will be readily understood that during the formation of the clot and before it becomes obstructive, particles of it containing numerous pathogenic microörganisms become detached and are swept by the blood current into the circulation. Curiously enough, this phenomenon occurs at more or less regular intervals and governs almost wholly the so-called pumphandle temperature and other characteristic symptoms. So long as the clot is complete and firm an absence of symptoms may be expected, but should it break down and pus form, this being the rule, the characteristic symptoms appear, their severity being governed by the quantity and virulence of the infective material entering the circulation.

The internal jugular vein is probably involved to some extent in all cases of sigmoid sinus thrombosis, the thrombotic process becoming complete in a goodly number of instances. Much less frequently the superior and inferior petrosal sinuses, as well as the cavernous sinus and the anterior and posterior condylar veins, become secondarily involved. The development of an abscess beneath the deep fascia in the posterior cervical triangle is secondary to infection of the posterior condylar veins.

Upon the disintegration of a thrombus, which may for a time have been sterile, infarctions occur, hence the infection may be carried by means of the blood vessels to various adjacent and internal organs and produce an abscess of the cerebrum or cerebellum, or involve the pericardium, lungs, pleura, liver and kidneys. Perisinus abscess is a very common finding in mastoidectomy, although never suspected prior to operation. We are all familiar in our mastoid work with the frequency with which the bony wall covering the lateral sinus has been absorbed, exposing the vessel to a greater or less extent. In these cases the infective process has been moderately mild in spite of the fact that the sigmoid groove is destroyed by carious erosion and absorption. During this process, however, nature has thrown out a protective barrier, first of granulations, then of fibrous tissue, which not only envelops the vessel wall but the adjacent dura in a defensive coating that defies the onslaught of devastating microörganisms. Obviously this triumph of nature over a virulent invader should never be disturbed, lest we open up a pathway for the entrance of infective material. I mention this because there has developed a tendency to disturb this safeguard for the purpose of investigation. This picture must not be confused with a sallow-gray appearance of the sinus in the absence of granulations and fibrous tissue. This particular type of case always goes to operation, even though there may be a cessation of symptoms for a time. It indicates that disintegration of the clot has already taken place and that pus will be found in the lumen of the sinus; furthermore, I have found this particular form of the disease to complicate what seems to be a simple otitis media, with spontaneous rupture of the membrana tympani, which apparently does well for a few days and then presents the characteristic symptoms of sinus involvement.

In primary jugular bulb thrombosis, as has been pointed out chiefly by McKernon, the infection is transmitted either through the closely associated blood vessels or a dehiscence in the floor of the tympanum. My belief is that thrombosis of the jugular bulb is usually associated with that of the jugular vein. As an etiologic factor disease of the middle ear is not only the primary but the sole cause of otitic thrombosis.

Discussion of this important disease would be wholly inadequate if we failed to keep in mind those not infrequent cases of thrombosis resulting from debilitating disease of enfeebled circulation, and variously termed marasmic, primary and noninfective. The few cases coming under my observation have all complicated influenza, and although the aural disease seemed to be the logical etiologic factor, the osseous sinus wall was not noticeably involved, and furthermore, symptoms of thrombosis did not appear until after the clot had broken down, thus favoring the entrance of the septic material into the circulation.

On the appearance of intracranial symptoms in a patient in whom the presence of the tubercle bacillus has been definitely established, whether in the bones, joints, glands, lungs or bowels, tubercular meningitis is the lesion to be suspected, even though symptoms of sinus thrombosis may be prominent. This statement I have verified by postmortem findings. On the other hand, on the appearance of intracranial symptoms during an attack of pneumonia and other nontubercular pulmonary diseases, as well as severe endocarditis, brain abscess should be suspected; but if the primary disease has been one of the acute infections, as influenza, measles, scarlet fever, etc., suppurative meningitis or sinus thrombosis is likely to be the causative factor.

The most frequent site of lateral sinus thrombosis is the sigmoid portion, more particularly at the knee, the next most frequent site of an initial lesion being the bulbous portion. If the involvement is rapid, it progresses directly through the small blood vessels penetrating the osseous structure, as is usual in all marasmic and allied conditions, and in such cases the infection may start at any part of the sinus. So long as the clot remains sterile, localizing symptoms may be wholly absent. Unfortunately this sterility does not prevail for any great length of time and if the sinus is suspected of involvement one should be ready for an immediate operation when disintegration begins in order to obtain the most favorable results.

Although some form of streptococcus, in recent years notably the streptococcus hemolyticus, is the usual microörganism found, my own experience leads me to the conclusion that the pneumococcus is almost as often present. We should bear in mind also the insidious action of the bacillus mucosus capsulatus. Although presenting few symptoms in the initial stage, this is ultimately one of our most formidable foes.

Our chief object should be to establish an early diagnosis but this is obviously quite impossible in most instances, the atypical cases seeming to become more frequent of late years; and yet to await the development of the classical symptoms is unquestionably to court disaster. The diagnosis in advanced, uncomplicated cases is not in any sense difficult and should be readily recognized. At present it is impossible to differentiate between pyemia not secondary to sinus thrombosis and that resulting from it, in the absence of contributory symptoms. However, the former is exceedingly rare and we must, therefore, assume that the sinus is diseased in some doubtful but urgent cases and proceed accordingly. Given a case presenting rigors, oscillating temperature at more or less regular intervals, enlarged posterior cervical glands, localizing pain over the mastoid process, the emissary vein and along the course of the jugular vein, and marked asthenia, together with a clear mentality and a positive blood culture, the diagnosis of lateral sinus thrombosis is complete.

A profuse aural discharge may greatly diminish in quantity or in some cases cease. The pain may be slight in some cases, and excruciating in others, and may radiate over any part of the head or neck, not necessarily being referred to the immediate site of the lesion for its greatest intensity.

Positive blood cultures are accepted by some authors as being wholly characteristic of sinus thrombosis. However, sepsis does occur in the absence of these findings, for some unexplained reason. Furthermore, a sterile clot may completely occlude the vessel, in which case it could not give rise to a bacteremia; hence we get a negative blood culture.

Cultivations are useful in helping to establish a diagnosis where other sources of infection can be eliminated, and where the clinical symptoms alone have not been sufficiently distinctive. I have seen cases run just as severe a course of septicemia, with negative findings, as would naturally be looked for in the presence of positive results.

It is unwise to accept the dictum that a bacteremia is invariably diagnostic of sinus thrombosis. The bacterial invasion of the blood stream may come from some other source, even in the presence of an aural disease. The chief diagnostic value of blood cultures, therefore, lies in a thorough analysis of the findings in their bearing on other associated and significant signs, such as the clinical symptoms, and I may add to this clinical experience, both of which are of much more real service than laboratory findings, and on these we must depend in the last analysis.

The appearance of rigors in either acute or chronic tympanic suppuration, even though the discharge may have ceased, is almost pathognomonic of sinus thrombosis. More especially is this true if optic neuritis is present.

Following mastoidectomy, chills and a high intermittent fever should be regarded with suspicion, and inasmuch as ocular changes are present in a large percentage of cases, even though they may be slight, ophthalmological examinations should be made frequently and are of definite value. When the cavernous sinus becomes involved, with extension to the ophthalmic vein, exophthalmos and edema of the eyelids are present. Dilatation of the superficial veins of the temples, forehead and eyelids follows pressure on a normal jugular, whereas no such effect is produced by pressure over an obstructed jugular. This has been pointed out by Crowe and is of diagnostic value at times. In outlining the course of the jugular by means of palpation, we must distinguish inflamed lymph nodes from a phlebitis of the internal jugular. The jugular vein may become obscure or even hidden when the surrounding glands have become infiltrated and painful, and I believe it is impossible under such conditions to outline the vein as a cord-like mass from thrombotic accumulation. As a diagnostic measure this sign, of which so much is written, is not only useless in most instances, but also dangerous on account of the false diagnostic impression it may give.

When the sinus wall is thickened and covered with granulation tissue, as in perisinus abscess, and on palpation feels tense and elastic, and pulsation is present, an expectant attitude should be the rule, even in the presence of some suggestive indications, as the symptoms, even though severe, are frequently relieved by elimination of the focus of infection through mastoidectomy.

A pulsating movement may be transmitted to a thrombotic sinus through the engorged arteries of a hyperemic dura, and is, therefore, of doubtful diagnostic value.

Some years ago, when Jansen visited Philadelphia, he expressed the belief that benign thrombi do develop solely from pressure of a perisinus abscess on the vessel wall, and in this opinion I heartily concur, as otherwise we could not explain the not infrequent cases of obvious thrombosis that end in spontaneous recovery.

When the osseous wall of the sinus shows no pathologic changes, it should not be disturbed unless the pyrexia and rigors continue after the mastoid operation.

After all it is difficult, even impossible at times, to determine whether we are dealing with a mural clot or an obstructive thrombus. Indeed, it is not so vitally important to determine this point, for if the general condition is grave and points strongly to a diagnostic sinus thrombosis, a definite conclusion is imperative and immediate steps must be taken for relief of the patient.

The mastoid emissary vein may become the site of a primary sinus thrombosis and secondarily involve the lateral sinus, as has been noted by Friedman and Greenfield (Laryngoscope, XXXIII, 349-1-23). It would seem in the instance cited that the emissary vein was unusually large and that the mastoid disease was very extensive. It is our aim, of course, not to injure the emissary vein during a mastoid operation, but I have seen an injury occur in quite a number of cases having extensive posterior necrosis, though I have not seen a case of the type described. It is well, however, that this should be kept in mind.

It is not necessary that the sinus plate should give evidence of actual osseous disease. It may, indeed, be quite normal in appearance and yet the underlying sinus may contain an obstructive clot.

Before arriving at a diagnosis we must, of course, be careful to exclude any other pathologic state that might possibly account for the symptoms present. Generally speaking, if during the course of either an acute or chronic suppuration of the middle ear or mastoid process, more particularly during an acute exacerbation of the chronic form, repeated chills occur, with a rapid rise of temperature, irregular in type, increased pulse rate followed by sweating, a high polymorphonuclear percentage and leucocyte count, we are justified in exploring the sinus.

One of the most characteristic and important symptoms is temperature of the so-called pump-handle variety. When this occurs, especially if accompanied by chills, during the course of an acute middle-ear disease, or should it suddenly occur during the after-treatment following a mastoid operation, sinus involvement should at least be suspected.

Young children are very prone to run a high oscillating temperature after a mastoid operation, and even though chilly sensations may be present the picture does not present the same importance that we attach to a similar condition in those of more mature years. I recall a series of six mastoid operations in one physician's family, in all of which the temperature rose as high as 104° to 106° for a period of forty-eight hours, although these children did not present the extreme variations that are so characteristic of the average case of sinus thrombosis. Should this temperature continue for a longer time, however, even in a young child, there would be justifiable suspicion of sinus involvement.

Sinus thrombosis is quite uncommon in both the aged and the young, the greatest incidence being between the ages of seven and forty. This should help us to be as conservative as possible, taking into due consideration the gravity of the situation.

The general bacteremia following the entrance of bacteria into the blood stream is responsible for the severe general symptoms. It is under such conditions that infarctions occur, causing metastases in other parts of the economy, and even if an operation is performed at this time to remove the original focus of infection, it may be too late to save the patient. Our chief object, therefore, is to recognize the disease before such grave complications occur.

For diagnostic purposes puncture of the sinus is still in vogue, chiefly because it is less dangerous than incision, and this procedure does afford some idea as to the vessel's contents, although not always definitely informative. On account of the negative trauma and the risk attendant upon opening a healthy sinus, primary puncture is to be preferred in uncertain cases, although I do not feel that the practice of exploratory puncture of the sinus can be relied upon for diagnostic purposes, for in cases of parietal thrombus the circulation is still present and withdrawal of blood would not only be misleading in such a condition, but add much to its gravity, as it would in all probability serve to postpone operative intervention and jeopardize the patient's health if discriminating judgment is not exercised in the analysis of the findings. If exploratory puncture is resorted to and pus, or blood containing pus, is withdrawn, this evidence is positive, but cases have been reported in which the needle has caused dislodgment of a portion of the clot or has been introduced at too acute an angle and penetrated the dura. When knowledge gained from puncture is insufficient, incision must always be employed, as this will give the information desired and be the first step towards relief in justifiable cases.

Fever is characteristically pyemic during the earlier stages. Sweating is profuse, and in the terminal stage almost constant. In atypical cases a chilly feeling only may be present and the temperature, though it may rise as high as 103° to 106°, does not present the usual fluctuations. Fortunately this type of case is uncommon and is usually significant of some further complication.

Although vomiting is not infrequent, it is not characteristic of sinus thrombosis, as it is common in practically all intracranial lesions.

X-ray findings have been of little or no diagnostic value in diseases of the sinus.

A lumbar puncture offers some help in differentiating between meningitis and sinus thrombosis.

I have long since laid great stress on the excellent mentality of patients suffering from uncomplicated sinus thrombosis, this notwithstanding the fact that they may feel very ill, have a coated tongue, fetid breath, loss of appetite, generally lose weight and take on the appearance of the typhoid state, and I look upon this mental clarity as a very important symptom, especially in a differential diagnosis.

Hoarseness, aphonia and dyspnea may be caused by pressure upon the spinal accessory, glossopharyngeal and pneumogastric nerves, due to the accumulation of pus in the jugular foramen. These symptoms were marked in the case reported below.

Primary thrombosis of the jugular bulb usually presents atypical symptoms and is found mostly in young children. It is even more difficult to diagnose than that of the lateral sinus, and this is particularly true of a parietal clot and may be justifiably suspected when infection of the lateral sinus has been excluded. Generally the symptoms are those peculiar to the digestive tract, typhoid fever and pneumonia, more particularly the latter. The rise of temperature is sudden, followed by a rapid decline, and the temperature subsequently fluctuates, as does also the pulse. As a rule there is no distinct chill, but the patient may feel cold as the temperature rises. During the interval the child does not seem ill and may even wish to resume his usual activities. Subsequently the symptoms become definitely septic, the patient appearing decidedly ill, with a fatal issue soon at hand if recognition of the trouble is not prompt and surgical intervention inaugurated.

When the bulb thrombus is obstructive the method devised by Whiting for determining its presence is conclusive, but this is of doubtful utility in parietal clot. If the clot cannot be reached in the usual way, the diagnosis of bulb thrombosis can be reasonably assumed. Other diagnostic methods, such as jugular ligation, etc., do not come within the scope of this paper and may be considered by the essayist on surgical considerations.

The usual case of sinus thrombosis is generally fatal unless relieved by surgical intervention. However, in those cases complicating acute middle-ear and mastoid disease the prognosis may be a little better, inasmuch as a few cases of recovery without operative interference have been reported, which would indicate a complete obliteration of the sinus. I shall briefly report a case of this type and show you a characteristic temperature sheet. I am indebted for the history to Dr. Samuel Blaugrund, of Trenton, N. J., the attending physician in the case.

D. E., male, aged 10 years.

Family History: Negative.

Personal History: Aural abscesses at intervals from age two to five. Lobar pneumonia, with resultant empyema, at age seven, cured by rib resection.

Present Illness: January 5, 1923, complained of severe headache, malaise, pain throughout joints of body, slight cough, and some soreness of throat, temperature 100°. Provisional diagnosis of influenza.

Next night discharge noted from left ear and on following day from right ear, thin and watery in character. Examination of smear showed pneumococcus and staphylococcus aureus. No pain in ear, in front of ear, or over mastoid process. Temperature range 99° to 100°, only complaint being frontal headache.

Bilateral myringotomy under chloroform anesthesia. Discharge became purulent in a few days and so continued to January 17th, or twelve days after onset of illness, during which time temperature as given, and frontal headache were the only symptoms.

During the afternoon of January 17th patient had a severe rigor lasting half an hour, followed by rising temperature to 104°, when I was called in consultation and saw the patient in the evening. Examination revealed no particular objective signs, but in view of the chill of that afternoon, I performed a double simple mastoid operation the following day. Each mastoid process was necrotic and filled with pus and granulation tissue. There was a perisinus and also an extradural abscess on the right side, with marked tenderness of right side of neck.

Leucocyte counts of the week preceding operation varied from 10,000 to 17,000, with 80% polymorphonuclear percentage.

Blood culture on day following chill—the day of operation—was positive for pneumococcus.

Following operation, temperature ranged from 99° to 104.5°, with tenderness along courses of jugular veins, varying from side to side on different days. Patient complained of pain on swallowing and pain in back of neck, which latter was thought to be due to position of head. Hoarseness was marked.

Operation on the sinus was considered on account of pain along the right jugular, but inasmuch as this pain was present also along the left jugular the following day, operation was deferred, as I felt that the soreness was due to glandular involvement. Dr. Hobart A. Hare examined the patient on this date, January 23d, and pronounced the lungs and heart normal. He made a diagnosis of bacteremia and did not suggest operation.

Spinal fluid was shown to be under pressure, by spinal puncture, cell count normal, Fehling reaction positive.

During the night following spinal puncture temperature dropped from 104.5° to 96°. From this time the general condition improved and the temperature range gradually dropped.

Treatment during the entire period consisted of forced feeding, Tr. Belladonna ♏V t. i. d.; also Tr. Digitalis ♏X t. i. d. For the patient's severe night sweats gr. XX Camphoric Acid was given at bedtime with good results.

Outstanding features were: Lack of clinical symptoms in comparison with advanced pathologic conditions found at operation.

Remarkable mental clarity during entire illness.

Value of conservative treatment.

Mastoidectomy no doubt saved the patient's life.

Would you operate if the infecting organism were the streptococcus and not operate if it were the pneumococcus?

TREATMENT OF LATERAL AND CAVERNOUS SINUS THROMBOSIS*

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The presence of a thrombus in a venous sinus is an effort of nature to wall off and destroy an infection that has penetrated or is penetrating the sinus walls. That these efforts at spontaneous obliteration of the sinus are at times successful, is now generally accepted. I have elsewhere reported one case of cavernous sinus thrombosis and a series of cases of lateral sinus thrombosis, unsuspected by the physician, at the time, resulting in spontaneous cure. These lateral sinus cases were practically without thrombotic symptoms. At the other extreme, we have the rapidly fulminating cases with violent septic symptoms, which symptoms too often are considered necessary for a diagnosis. Between these two extreme types there will be many variations. The symptoms in sinus thrombosis are an indication that nature's barriers are unsuccessful or giving away, and a bacteremia resulting. It is not the thrombus that kills, but the blood stream infection resulting from its disintegration. It should be the aim of the surgeon to make his diagnosis and operate before this infection has gained headway.

It is from the signs of this first invasion that the presence of a thrombus is suspected and diagnosis made. Once the clot begins to break down, it progresses with increasing rapidity, and to delay for the typical clinical picture of recurrent chills, high temperature and sweating, is to jeopardize the patient's chances of recovery.

In cavernous sinus thrombosis, however, the diagnosis is almost automatically made on the formation of the clot—not the beginning of disintegration—by the swelling of the tissues of one orbital cavity, and protrusion of the eyeball, followed within a short period by similar involvement of the other eye. This rapid extension to the second eye is diagnostic and always occurs.

TREATMENT OF LATERAL SINUS THROMBOSIS

If conditions found at the mastoid operation, or from subjective symptoms, indicate a probable sinus infection, the sinus should be uncovered for inspection. There seems to be a strong reluctance with some otologists to expose the sinus for diagnostic purposes. The procedure is not difficult or dangerous. We cannot too strongly emphasize that it shows better judgment to establish a diagnosis of thrombosis early on moderate symptoms and exploratory opening, than to wait for strong positive symptoms, only to find that the infection has been already carried to other organs.

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If before opening the mastoid, sinus involvement is suspected, attention to preliminary details will shorten the time of operation, and give cleaner results. Separate trays of instruments should be prepared for the mastoid, sinus and jugular. The patient should be prepared before going to the operating room, the field sterilized over the mastoid, sinus and neck, and protective dressings applied to each region separately. Each area can thus be dealt with independently without loss of time. The surgeon's and assistant's gowns, as well as the instruments should be changed between each step of the operation.

The mastoid operation completed, the cavity should be copiously flushed with normal salt solution and packed with gauze strips saturated with alcohol, to remain until the space is needed for the deep sinus exposure.

The technique of approaching the sinus will depend on conditions found in the mastoid and the anatomical position of the bony contour over the sinus. The position of the sinus is subject to marked variations referable to the mastoid cavity, often situated beneath its floor. If the bony wall is thin or the sinus already exposed by previous necrosis, the exposure can be made with a sharp curet or small rongeur. I have found no instrument as useful for this bone work as the small Stille bone forceps.

Where the bone is intact and of indefinite thickness, much time may be consumed in cautiously working through, expecting each stroke may uncover the sinus and fearing to perforate its wall. To obviate this, the following procedure seems to have the advantage of rapidity and safety. The soft parts over the lateral portion of the sinus being incised and bleeding controlled, a hasty search is made for the emissary vein, the condition of which often gives valuable information. With a Hudson drill the skull is now perforated one-half inch behind the location of the knee, and the sinus exposed. We can work the rongeur rapidly forward to the knee, uncovering the sinus, working parallel to the vein and towards the mastoid cavity. If the bone is too thick for easy biting, a wide groove cut through the outer table, with a three-fourths inch gouge, the gouge being held a little less than parallel with the skull, saves time and danger of tearing the wall. The knee being uncovered, the sigmoid portion is quickly exposed, working from the sinus into the mastoid.

Tearing of the sinus wall may occur during bone removal, and is usually ascribed to nipping the wall between the blades of the rongeur. This accident, I believe from experience, is caused by the operator, when the bone does not bite readily, using the forcep handles as a lever, thus partly breaking the bone loose, the rough edges penetrating the sinus wall from the downward tilting movement. This accident can be avoided if the bone is first thinned by the groove made through the outer table, as previously mentioned, which permits clean cutting of the forceps. Tearing of the wall, when it does occur, is embarrassing, but should not cause the abandonment of our search. A small pad placed over the tear will control the bleeding, and can be held in place a short time by an assistant, while the operator proceeds. The whole exposure should ordinarily be done in a few minutes, and for diagnosis should be at least one inch in length.

The sinus wall is now carefully examined for changes in color, thickness or necrotic spots. When there is any departure from normal, it is uncertain to say what the contents may be, and its interior must be examined. We make one exception to this rule: when operating on a mastoid, and the sinus is found exposed through a necrosis of the inner mastoid wall and covered with granulations, in the absence of clinical symptoms it is not molested. Our experience is that the granulations on the outer surface are a protection to the interior. This also applies to perisinus abscess.

When in doubt, the interior of the sinus should be examined. It is without risk if negative, without damage to the function of the sinus, and the bleeding is negligible.

The use of the needle and punctures are unreliable, and moreover will not show a mural clot, and their use should be discarded. An incision through the sinus wall one-fourth inch or more in length made with a paracentesis knife, layer by layer, is most satisfactory. When the intima is reached and before being cut through, it can generally be demonstrated if a clot is adherent to the wall. At this stage, before the final incision of the intima, pressure should be made on both the distal and proximal ends of the exposed sinus before the inner coat is severed. If the whole width of the sinus has been exposed, this pressure, properly and firmly applied, will control bleeding and allow an examination of the interior walls. If no clot is present, the alternate releasing of the pressure, first above and then below our opening, will show by the rate of the blood flow whether the sinus is free or obstructed beyond the opening. If no thrombus is present, a small pad placed over the opening will quickly control all hemorrhage, permit the sinus to continue its function, and the opening through the vessel wall will quickly be repaired.

Both sinuses can be explored in this manner, as we have demonstrated on several cases.

A positive diagnosis of thrombus being demonstrated, the exposure should be continued posteriorly until healthy sinus wall is exposed, and then well down towards the bulb. Exposure of the bulbar end is the most trying part on account of the confined space and difficult angle. The extent of the clot determined, the manner of handling the clot must be decided. I know that the majority of operators advise going at once to the jugular and dealing with it. In truth, I must admit that I have never ligated a jugular until I have a general idea of the extent of the involvement to be dealt with.

No general rule can be laid down, each case must be modified to meet the condition present. If healthy sinus has been exposed towards the torcular end, a plug of gauze is introduced between the bone and sinus to obliterate its lumen and prevent bleeding when the clot is removed. We consider this control of primary hemorrhage most important. The amount of blood that can be lost in a few moments is great, and this sudden withdrawal of the blood from the brain can only produce increased shock.

If, however, healthy wall has not been exposed posteriorly, we prefer making a second opening with the Hudson drill well towards the torcular. If the wall is normal in this opening, it makes an excellent point to obliterate the sinus. As Toby has pointed out, this gauze plug can be left in situ for several dressings, until we are satisfied an organized clot is formed. If we find a thrombosed condition beneath this trephin opening, we are reasonably sure the disease extends to the torcular, in which case the bridge of bone anterior to the opening must be cut away. The posterior limits outline, with a pair of small dural scissors, beginning at our exploratory incision, the outer sinus wall is opened posteriorly to the limits of the clot, and the outer loose edges of the wall cut away. The clot now lies exposed as in a trough and can now be removed without danger to the inner wall, using a large size curet.

With the plug in position the portion beneath the bridge of bone, if not cut away, can safely be emptied with a dull curet, bearing in mind that the inner wall is equally as diseased as the outer, and that a perforation opens an entrance to the meninges. Thus far the lower sigmoid portion has not been touched. The bone work has been carried as deep as possible, which means close to the bulb. The sinus is freely opened as before. If free bleeding is encountered, the limit of the clot has probably been reached. If the condition of the vessel walls has steadily improved as we approached the bulb, with free full bleeding, we do not ligate the jugular, but hold ourselves in readiness to do so later, if symptoms so indicate. So far we have not had to do a secondary ligation. If there is no free bleeding from the opened sinus, the exposed clot is removed but no attempt is made to enter the short unopened portion posterior to the bulb. So far nothing has been done to detach a clot and pass it into the blood stream, but the introduction of a curet in the closed canal could easily act as a plunger, pushing some of the contents ahead of it. This we believe is the real source of the danger from detached fragments.

The probable involvement of the jugular bulb having been determined, the next step is to isolate the thrombus below from the blood stream by ligation or resection of the jugular, hoping to confine the infection in the space between our torcular plug and the closed jugular. Whether a jugular should be simply ligated or resected is still a much debated question, both have their strong advocates. Statistics seem to indicate equally good results from both. Personally we have thought conditions called for resection in but three of our cases.

Ligation is quickly and easily performed through a small wound. Resection is a much more extensive operation, requiring time, careful dissection, and still leaves a portion of the bulbar end of the vein in situ. Our plan has always been to expose the vein as for ligation. If the appearance of the vessel is good and no thrombus is present, we ligate. If, however, the walls appear much damaged and a clot is present, the resection is called for.

The point of election for ligation is in the upper carotid triangle on a level with the thyroid cartilage, above the facial vein. There are two ways of making the skin incision for this exposure. The one usually used is an incision one and one-half inches long over the anterior border of the sternomastoid muscle and platisma. The neck is distended by a small sand bag under the shoulders. The second approach is by a transverse incision made through the skin and platisma, following the most marked skin fold. This incision should be well marked with a scalpel, with the chin in the median line, before placing the sand bag. With the use of retractors this gives good working space, and the resulting scar is hidden. The carotid sheath is now exposed in front of the sternomastoid muscles, by dry dissection, and the facial vein located. The carotid sheath is opened, and the jugular exposed. If the vein is patent, a double chromicized catgut ligature is passed around it above the facial and tied, the upper one first, and the blood expressed before tying the second a short distance below.

Nothing is gained by cutting the vein between the ligature, and it exposes the neck wound to infection, if the intima is contaminated.

The wound is closed with metal clips and a neck dressing applied. If, however, the jugular is thrombosed or evident phlebitis is present, our wound is freely extended upwards behind the angle of the jaw and downwards to the clavicle. The lower limit reached, the vein is ligated between a double ligature at least one-half inch apart and all contributing veins tied off with double ligatures. The upper jugular end is now doubly ligated as high as possible. Before severing the lower end a strip of gauze is placed beneath it to catch any drip that might drop into the wound and the several ends are immediately sterilized with pure carbolic acid. This technique is carried out until the jugular is completely removed. Several stands of silkworm-gut are twisted together and laid in the bottom of the wound, coming out at the lower angle, and the wound closed with metal clips. With no evidence of infection, this drain is removed about the third day.

We now return to the deep bulbar end of the sinus, and may endeavor more boldly to express the bulb. The clot is now removed to the bulb. If this is followed by bleeding from the condylar or inferior pterosal veins, the sinus is plugged. If no bleeding occurs, the sinus can be entered with a malleable curet, bent at a proper angle, and the clot partially removed and broken. The emptying of the bulb at this time is greatly assisted by the use of a small rubber tube attached to an electrical suction pump. This will take any fragments broken up by the curet and pull out pus or semi solid portions. In our last four cases we have been able to pull out the clot in mass from the bulb by the use of suction alone. This can also be used at the dressings, if desirable, to remove a collection of pus.

A catgut drain of several twisted strands is introduced into the bulb and the whole field filled with iodoform gauze. We are accustomed to draw the scalp flaps together over the dressing, in the lateral portion of the sinus and hold them together with three or four metal clips. This prevents shrinking of the flaps, lessens the space to be filled by granulations and produces less scar. We have not noticed that it interfered with proper drainage. At the first dressing, usually the fourth to sixth day, the incision can be torn open to remove the compression plug, if this has not been introduced in a more posterior trephine opening. If the latter has been used, the gauze is removed without disturbing the flaps and new gauze inserted in the resulting tunnel. The flaps should be reunited if opened. It not infrequently happens that bleeding will occur on attempting to remove the compressing plug, and it may be that it cannot be dispensed with until after several dressings.

This manner of handling the bulb has been very satisfactory. Only once have I resorted to the Grunert operation for exposure of the bulb, and my impression is that any advantage gained by freer exposure, is offset by the difficulties of the operation, the danger of facial paralysis, and the almost certain infection of the deep structures of the neck.

The infection which was confined in a closed tube has now been mechanically blocked off, and a larger part laid open and its contents evacuated. The closed upper part of the jugular vein has fair drainage to the bulb, which is the most dependent point with the patient in the recumbent position.

The complications that may follow will be mainly caused by the infection that has already passed into the blood stream, the most common and least dangerous being an acute arthritis of the joints, and the most dangerous, septic pneumonia, endocarditis and meningitis. The last, we believe, is more often caused by rough handling of the curet, and opening a direct pathway for infection of the meninges, than from the bacteremia. To discuss these would go beyond the time alloted. We wish, however, to call attention to the apparently good results reported in overcoming the bacteremia by the use of blood transfusion.

In closing, we would formulate the proposition, that our successful results with lateral sinus thrombosis will be inversely proportionate to the delay in making the diagnosis and instituting the surgical remedy.

TREATMENT OF CAVERNOUS SINUS THROMBOSIS

Our experience with these cases has been very limited, being only five cases, one secondary to lateral sinus thrombosis, the other four without aural suppuration, but with pus in the ethmoidal and sphenoidal cells.

From the occasional reports in the literature and our own cases, we are inclined to the opinion that thrombosis of this sinus is more frequently the result of nasal or orbital than of aural infection. When of aural origin, it is secondary to infection in the jugular bulb.

The anatomical location of the ear and the direction of the venous blood stream, all make it improbable that the infection from an acute otitis media or mastoiditis would reach this sinus. In the location of the posterior ethmoidal and sphenoidal cells and orbit we have anatomically a more logical source. Also the percentage of spontaneous recoveries, while not large, is greater than the lateral sinus thrombosis. In our five cases, the one complicating the lateral sinus thrombosis recovered, the lateral sinus only being operated, but with the loss of sight in both eyes. Of the four nasal origin, operation was attempted on the first two by exposing the frontal lobe through the frontal sinus and bone, then draining away the cerebral fluid by lumbar puncture, and with the head hanging down over the edge of the table allowing the brain to fall away from the skull floor to obtain working space.

After two attempts, with indifferent operative success and no benefit or apparent harm to the patient, all direct operative attempts on this sinus have been abandoned and our efforts limited to the draining of the primary focus of infection, whether ethmoidal or sphenoidal cells, trusting to the slender hope that the infection may be so attenuated that spontaneous cure may result.

DISCUSSION

OF THE SYMPOSIUM ON SINUS THROMBOSIS

Dr. Edward B. Heckel (Pittsburgh, Pa.): To attempt to discuss this subject after Dr. de Schweinitz' very excellent and comprehensive exposition is like carrying coals to New Castle. This subject is particularly interesting to the ophthalmologist, as the first sign of a thrombosis of the cavernous sinus is manifested in the eyes.

These external evidences are of course secondary to the condition within the sinus and are the result of an obstruction to the venous circulation, even the nerve involvements shown by palsies and paralyses being the result of pressure brought about by the obstructed venous return. This obstruction in the venous flow results in edema of the orbital cellular tissues and the lids, with a proptosis of the eyeball, which begins on one side but soon spreads to the opposite side as the result of the extension of the thrombosis from one caverous sinus to the other by way of the circular sinus.

Changes in the fundi are not always present; there may be some edema of the retina or even some swelling of the optic disc with an engorgement of the veins, or there may be no abnormality at all.

This is a rare condition, as evidenced by the few cases reported. Even in the very large experience of Dr. de Schweinitz there have been but four cases. In my own experience I have been privileged to see only four cases, all of these the result of infection. One of the cases was the result of a brain abscess of the frontal lobe, with autopsy.

Dr. John F. Culp (Harrisburg, Pa.): Dr. Smith has covered the subject of lateral sinus thrombosis in such a thorough and masterful manner that there remains little or nothing for one to add. If you will permit me, however, it might be well to emphasize certain salient facts of which he has already spoken. He has told us that the disease is due to infecting microörganisms carried to the vessel wall from diseased areas either overlying this large vein or in its immediate neighborhood. With few exceptions practically every case of lateral sinus thrombosis is seen in connection with either acute or chronic mastoiditis. Occasionally we see it in labyrinth involvement or in either acute or chronic otitis media, but such occurrences are rare. There is still much to be learned concerning the immediate causative agent or agents that produce this serious disease. We see on the one hand a case of extensive mastoiditis with complete destruction of the bone and associated perisinus abscess go on to complete and uninterrupted recovery; on the other hand we see a comparatively mild or limited mastoiditis complicated with a severe sinus thrombosis. In each instance we probably find the same predominating microörganisms. Just why in the apparently severe case we have an immunity and in the other apparently mild case we get this serious complication no one is able to tell us. We ascribe it to either local or general weakened resistance on the part of the patient's tissues and this is as far as we can go.

The diagnosis of this disease in advanced and uncomplicated cases we have just been told should not present many difficulties. Unfortunately, as we have also been told, the atypical cases are very frequent and apparently are becoming more so. It is here the very nicest discrimination for early diagnosis is required. A diagnosis deferred until we get the so-called pump-handle temperature and other classical symptoms is courting disaster. The assumption is that every case of sinus thrombosis begins in the vessel wall and is then known as a mural or parietal thrombosis. It is at this time that a diagnosis followed by the proper operation is life saving. Unfortunately at this stage the classical symptoms such as bacteremia, severe chills and septic temperature are wanting. Clear mentality has been, in my experience, an invariable rule in every demonstrated case. In two fatal cases which can now be recalled—one operated on two days before death and one not operated at all but confirmed by autopsy—the mind was clear till almost the end. The age of the patient is also helpful in arriving at a diagnosis. Personally, my youngest patient has been fourteen years of age and my oldest forty-four years. As has already been said the age of incidence is between ten and forty-five years. We must not forget that there are other complicating general diseases which, when associated with acute or chronic mastoiditis or a suppurating ear, can simulate this disease. Recently I incised the drum membrane of a child of seven years because of earache. Two weeks later a simple mastoid operation was performed, the diagnosis being based absolutely on the previous history and x-ray findings. A perisinus abscess was found and the lateral sinus was seen covered with dark red granulations; the vessel, however, was not opened. The septic temperature, sweating, leucocytosis and high polymorphoneuclear count, but no bacteremia, persisted. A slight cough and slight mental confusion caused postponement of operation until a lung examination showed pleurisy as a complicating condition. The child made an uneventful recovery.

In conclusion permit me to emphasize the fact that it is unsafe and unwise to wait until we get the classical symptoms of this disease before making a diagnosis and giving surgical relief. Personally I have never had cause to regret opening the lateral sinus when there was strong suspicion of a thrombosis.

Dr. J. Homer McCready (Pittsburgh, Pa.): Dr. Day has covered the surgical treatment very thoroughly, and I know that all he has said has been based upon the careful study of hundreds of cases. He has brought out a point which I think is very important—when the lateral sinus is found exposed through a necrosis of the inner mastoid wall, and is covered with thick granulations, it is surprising how much pus drains from these granulations. It flashes through the operator's mind that probably he is dealing with a fistula into a thrombosed sinus or brain abscess. Without any untoward symptoms of sinus thrombosis before operation, I think it is reasonable to allow these sinuses to remain intact, and you will find that many of these cases will make an uninterrupted recovery.

We have probably all exposed sinuses, found a clot there, and after slight curetting removed the clot. These cases will go on to recovery without ligation in most instances, but I think it is a better plan, if you have made a diagnosis of sinus thrombosis beforehand, or even after the sinus is opened, not to disturb that clot in the sinus, but proceed to do ligation. The internal jugular vein should be exposed, and then ligated or resected as the case may be. In the majority of cases simple ligation of the jugular vein will suffice. However, if we expose the jugular vein and find a large clot extending into it, that case should be resected. Even after we have resected or ligated, many complications present themselves, and we should consider first, the question of metastasis before ligation; secondly, secondary infection of the neck at the point of ligation or resection; thirdly, infection in and just below the jugular bulb; fourthly, extension of septic thrombosis toward the torcular; fifthly, intercurrent acute infections; sixthly, iodoform poisoning, if iodoform was employed in the dressing. Of course all these must be dealt with independently.

There is another type of case that gives the otologist quite a lot of worry, and that is the case in which, after resection or ligation, we have a septic temperature for a week or two. We call the internist, and he may find something or he may not. We make careful inspection of the mastoid wound and cannot find anything. We must not lose sight of the general medical treatment of those cases. We may give anti-streptococcic serum and that case may get well, and then we will have two or three cases and use anti-streptococcic serum with no results. Then we resort to bichlorid. Perhaps we have two or three cases that respond to this treatment, and then we have a series with no results. In all these cases we may get just as good results by putting them on general supportive treatment —good nourishing diet and plenty of fresh air. Each case must be dealt with separately.

In regard to cavernous sinus thrombosis, I have had two cases that were of otitic origin, and one of nasal origin. As Dr. de Schweinitz has pointed out, in these cases we have to differentiate between brain tumor, frontal lobe abscess, and accessory sinus involvement.

Dr. George B. Jobson (Franklin, Pa.): I wish to speak of two cases of acute fulminating cavernous sinus thrombosis which I saw several years ago. Both cases were quite similar, in that they were men, one being thirty-five years old and the other forty-five, and that the cause of the trouble in each was extraction of acutely infected upper molar teeth. The characteristic signs and symptoms mentioned by the author were present in both cases. The thirty-five-year-old man lived two days after the extraction, while the forty-five-year-old man died on the third day. The latter, in addition to the eye signs, had marked edema over the mastoid on the affected side. Edema of the mastoid in cavernous sinus thrombosis is a differential sign from retrobulbar phlegmon for which it might be mistaken. The mastoid swelling in cavernous sinus thrombosis is due to extension of the thrombosis to the lateral sinus, and mastoid emissary vein.

Dr. Edward Jackson (Denver, Colorado): I have seen five cases of thrombus of the cavernous sinus, three of them under my care and the others in consultation with other members of the staff of the hospital. One was noninfective, a man with heart disease of long standing and periods of poor circulation. The cavernous sinus became thrombotic. The others were all infective cases.

With reference to infection, it strikes me that in one of my first cases the only sign that made me think particularly of cavernous sinus thrombosis was that the thrombus appeared in the other orbit. The primary lesion was on the outside of the head, on the upper lip and cheek, and the tissue of the orbit began swelling on the other side. Probably some of these cases do arise from extension along the wall of the fistula, particularly those which start in the orbit or in the sinus most closely adjoining the cavernous sinus; but I feel sure a large part of them arise, not by extension along the wall, but by the carrying of a portion of the infected clot from the site of the original lesion.

In most parts of the venous system we have physical conditions that resemble an active stream and its tributaries. Anything going into the tributaries may be carried into the main stream. In the cavernous sinus we have something more like a large pool, so that such a fragment may remain there, as in an eddy of a stream, for a considerable time and start a thrombosis in that particular location. That will happen no matter how far away or in what communicating branch the original lesion has been located.

I think, too, that the published statistics probably overrate the relative frequency of origin from the mastoid or from any of the lesions of the head sinuses, because those cases are being watched for the signs of cavernous sinus thrombosis, while a case of carbuncle, or a lesion on the cheek or in the throat or nose, would not be watched with that in mind. The diagnosis is made in such cases because the only communication we can think of for such a local lesion as edema of the conjunctiva is through the cavernous sinus.

One of the cases I saw recovered as regards the cavernous sinus. Circulation was restored in the orbit and the exophthalmos practically disappeared. But the girl died of brain abscess, which probably broke into the lateral ventricle.

Even with early diagnosis, the prognosis with medical treatment is so bad that it would be right to experiment to see if what was accomplished in Knapp's case cannot be accomplished in a fair proportion of cases. I never have considered doing this operation myself, but I think these cases with such bad prognosis offer a fair field for investigation and experiment, to see if something cannot be done by early opening into the sinus.

Dr. L. L. Doane (Butler, Pa.): I wish to report two cases of cavernous sinus thrombosis, one of a boy about eight years of age. The right eye was very much proptosed, the left eye was little affected. There was a history of infection of both middle ears, finally extending to the mastoid on the right, and then about the second day the swelling of the orbit of the right eye. When the case was sent to the hospital in Butler, he was in a precarious condition. His temperature was 106.4, he was weak and apparently deaf, but not comatose, though his mentality was considerably below par. The father insisted that an operation be done, so I opened the mastoid and found a moderate amount of pus. I extended the operation back to the lateral sinus and opened it. There was very little bleeding, and I was about to extend the opening when the anesthetist called my attention to the fact that the boy was about to pass out, so I hastily concluded the operation, and he died soon after.

The second case was a man of perhaps 35 years, a foreigner. I was called late in this case also. There was pain in the face, I was told over the phone, and I thought perhaps there was an infection of the antrum. I found the man comatose, both eyes protruding, a general cyanosis and puffiness of the face, high temperature, and pus coming from the teeth, mostly from the third molar on the right side, and from the nose and nasopharynx. I had no instruments with me for any operation that might be indicated in this case, and did not attempt to operate. But I did something I thought was still better under the circumstances. I advised them to call Dr. Day of Pittsburgh. This man passed out, I understood, several hours later, after having been seen by a general surgeon, who did not attempt an operation.

DR. GEORGE F. GRACEY (Harrisburg, Pa.): I have been particularly interested in the fundus findings in cavernous sinus thrombosis. I had a case last April, a girl of 23, who had had a chronic left mastoid for ten years. She had an acute exacerbation, came to the hospital, and I operated. I found a large mastoid cavity filled with cholesteatoma. A radical operation was done, exposing the sinus, which was normal on palpation but had a large perisinus abscess. The fourth day after the operation she had a chill. The mastoid cavity had been so broken down that I felt there was a possibility of high temperature coming from the pus, so a blood culture was taken, which was negative. I made a fundus examination at that time, but found nothing, and continued to make such examination until the end. On the sixth day she had another chill, and another blood culture was made, which was also negative. On the eighth day she suddenly developed edema of the lids and conjunctiva, and all the signs of a cavernous sinus thrombosis. We dilated her pupils, expecting to find the typical appearance in the fundus of a cavernous sinus thrombosis, but found no dilated veins and no large hemorrhages, no edema of the disc, but only a small hemorrhage covering the left macula, much like the picture of an arterial embolism, without the pallor.

The only ground upon which I could explain it was some interference with the arterial circulation. So far as I know this is a different picture from the fundus findings in these cases. This girl was operated upon and we found the lateral sinus completely thrombosed. The case resulted fatally.

DR. EDWARD A. SHUMWAY (Philadelphia, Pa.): The diagnosis of cavernous sinus thrombosis is difficult only in the early stages. You may have an appearance at first resembling orbital abscess, but usually in a short time the involvement of the eye makes the diagnosis easy, particularly if you have an extension of the edema behind the mastoid and down the back of the neck, which of course would indicate the involvement of the petrosal sinuses.

I am sorry Dr. Day did not speak of operative measures. I think the matter one of great importance. The condition means practically certain death unless something is done, but we must consider the difficulty of approaching the cavernous sinus, the impossibility of closing off the sinus beyond the clot, the rapid extension elsewhere, the danger in case both sides are involved, the possibility of the necessity of ligating both jugulars at one time. The operation through the orbit necessitates the removal of the eyeball, and this makes it difficult to get the patient's or family's consent, and the small chance of recovery makes the consent still more difficult to obtain.

DR. SMITH (in closing): In removing the bony sinus wall I have found the Jansen forceps very useful and I feel that the chance of injury to the sinus itself is remote.

I tried to point out the advantage, under certain conditions, of sinus puncture, which I feel has a place in the hands of those more or less inexperienced in sinus surgery. Personally I have never found it advisable to puncture a sinus for diagnostic purposes.

As regards jugular ligation, many cases are reported, especially abroad, where the obstructive thrombus has been removed, free bleeding established from the torcular and the bulbous end, and then packed, the cases recovering without ligation. Many operators have become quite conservative in recent years about the necessity for ligation, and yet this procedure is absolutely necessary in some instances.

In regard to the resection of the jugular, following ligation, I quite agree with Dr. Day that the results are equally good in either case. I will show a temperature sheet in a case of sinus thrombosis in which the clot eventually became sterile and the patient recovered without operation. This was the child reported in my paper.

DR. DAY (in closing): I have had only five cases of cavernous sinus thrombosis. Four of these were of nasal origin; one was a complication of the lateral sinus. The last one got well with the loss of sight of both eyes; the other four died. In two we attempted to drain the cavernous sinus, but I have not tried that in fifteen years. In neither were we successful. I opened one sinus, but it did no good.

I cannot see how we can operate on the cavernous sinus successfully. It is situated beneath the brain, surrounded by structures, and the long route to the brain will have to be taken, and the chance for success is only one out of one hundred. If you are successful on one side there is the cross communication to the other and I doubt if you can drain successfully. I am glad someone is enthusiastic about it, but I cannot see it. Mosher confessed he did not know whether he was in the sinus or not, and postmortem showed he was not.

THE GRADENIGO SYMPTOM COMPLEX*

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When in 1904 Gradenigo described a new symptom complex, occurring in the course of an otitis media, and reported a series of cases, five of them being his own, it provoked considerable discussion and many doubted the explanation advanced by Gradenigo at that time. Subsequently, in 1907, he reported fifty-seven cases, illustrating his previously described syndrome, and established it as a definite clinical entity. Since the publication of Gradenigo's first paper his observations have been confirmed by many others, so that the Gradenigo symptom complex now rests upon a firm foundation. This syndrome, or symptom complex, is in brief as follows: (1) a purulent otitis media, with or without mastoid involvement; (2) severe pain referred to the temporal and parietal regions on the affected side and explained by Gradenigo as being due to an involvement of the gasserian ganglion; (3) paralysis or paresis of the sixth or abducens nerve on the same side.

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Although first described almost twenty years ago, and subsequently confirmed by abundant evidence, I have been unable to find any reference to the Gradenigo symptom complex in any modern textbook, though Ballance refers to it in his two-volume treatise on "The Surgery of the Temporal Bone." Perkins' first article, published in 1910, in which he collected ninety-five cases and published six, contains sixty-five references to the literature. Among these there is but one reference in the American literature, that of Hastings, and very few in the British. Since that time I have been able to find but six references in American literature—three by ophthalmologists and three by otologists.

Gradenigo divides the cases into three groups: (1) where there is present the typical syndrome and no other complication; (2) the typical syndrome, and in addition secondary symptoms, such as the second, third or fourth nerve paralyses; (3) a group, evidently of virulent type, first presenting the classical syndrome but later developing meningitis, with death ensuing. In Perkins' analysis of ninety-five cases, sixty showed signs of paralysis before operation, and twenty-seven after. In eight the time was not stated. Of twenty-nine cases operated upon there were twenty-seven cures and one death. In one case the paralysis persisted. Perkins regards the "prognosis as always uncertain." Out of ninety-five cases eleven died of meningitis. Of the eighty-four remaining, recovery of abducens paralysis occurred in sixty-seven, probable recovery in five, partial in four, no improvement in one, not stated in six.

Gradenigo considers that "the syndrome of clinical symptoms is the result of a circumscribed simple serous leptomeningitis, localized about the tip of the pyramid and caused by the diffusion of the infection in the tympanum. The consideration of the clinical picture," he says, "leads him to believe that the progress is along the preëxisting anatomical paths." These paths are described by Perkins as follows, though he considers that there may also be others:

"(1) The infection may follow the sublabyrinthine route, extending from the tympanum below the labyrinth and internal auditory meatus to the petrous tip.

"(2) From the mastoid antrum it may extend through the subarcuate fossa or petromastoid canal, which passes inward beneath the superior semicircular canal, and reach a layer of cells sometimes lying above the internal auditory meatus, and thus arrive at the petrous tip.

"(3) Or this point may be arrived at by way of the carotid canal, access to which is obtained either by eroding the bone on the anterior tympanic wall, or through one of the caroticotympanic foramina which give passage to the carotid branches of the tympanic plexus.

"(4) Finally the infection has been found in some autopsies to be through a layer of cells extending along the eustachian tube, thus passing from the tympanum to the petrous tip."

The vulnerability of the sixth nerve is due to its exposed course, the basilar portion being approximately one inch in length. An interesting account of its minute anatomy occurs in Wheeler's article, to which those interested may refer. Vail quotes Grandenigo's reference to Dorello's original description and publishes seventeen drawings from original dissections. Perkins also gives an interesting discussion of the applied anatomy.

The paralysis is probably due to the passage of the nerve through a minute canal, called by Grandenigo, Dorello's canal, and bridged over by a fibrous band, called by Gruber the ligamentum petrosphenoidale. Swelling or edema of the walls of this canal cause pressure and a constant paralysis.

The pain is due to the proximity to, and consequent involvement of, the gasserian ganglion, the latter lying in a depression on the anterior surface of the apex of the petrous portion of the temporal bone. Grandenigo considers the complications of the mastoid as associated with a severe otitis media, but otherwise as having no relation to the syndrome. Among Perkins' series of ninety-five reported cases, are six cases of retropharyngeal abscess. Perkins also reports one case of retropharyngeal abscess in his recent communication. "An epidural abscess in the middle fossa," he thinks, "could find its way through the foramen lacerum medium into the retro-pharyngeal space, while if the pus was present in a cell at the petrous tip it might rupture through the lower surface of the skull and reach the same location. More externally it might follow the levator palati muscle to the lateral wall of the nasopharynx."

Wheeler calls especial attention to the importance of cases of otitic origin in ophthalmological practice. The cases of syphilitic or toxic origin are so much more common than those of otitic origin that the latter are likely to be overlooked and an incorrect diagnosis accordingly made. He cites one case, where the abducens paralysis complicated an external otitis, and another case of double external rectus paralysis, complicating a unilateral mastoiditis.

Under prognosis and treatment Wheeler says, "The paralysis may clear up in a few days and in a few cases has disappeared almost miraculously after mastoid operation, as in Perkins' second case and in my first case. But usually it persists for weeks and months, and there is a possibility of permanent impairment of the nerve.

"The treatment lies in the field of the otologist, and should be left to him, for recovery of the abducens paralysis depends upon his success in treating the ear condition. Although Gradenigo's syndrome may indicate a deep-seated process, this in itself does not justify mastoid operation in every case, for recovery has occurred in a number of cases without mastoid operation and even without myringotomy."

Opinion in regard to the advisability, or necessity, of mastoid operation seems to differ widely. Undoubtedly as Wheeler says, "Recovery has occurred in a number of cases without mastoid operation and even without myringotomy." Maybaum, in reporting two cases, evidently subscribes to the views previously current, and says that, "Although the syndrome indicates the presence of a deep-seated process, it does not follow that a mastoidectomy is necessary in every case." Perkins' attitude in regard to operation seems to have undergone a decided change in the interval between 1910 and 1920. In his first article he says, "These statistics, I think, would tend to show that abducens paralysis is not, *per se,* an indication for operation." But in his second article, evidently in the light of further experience, he distinctly says, "While recovery from the Gradenigo syndrome is possible without operative intervention, I believe that the syndrome itself, without apparent mastoid involvement, is sufficient justification for a mastoid operation at least." In justifying this apparently radical position, in view of the previously expressed opinions to the contrary, he cites Maybaum's second case. "The ear had become dry, the neuralgia and abducens paralysis had been improving for ten days, when a fulminating type of meningitis developed, and the patient died within twenty-four hours." He then adds, "No doubt these fatal cases will occur in spite of operation. It seems probable, however, that their number would be lessened if early mastoid operation were the rule."

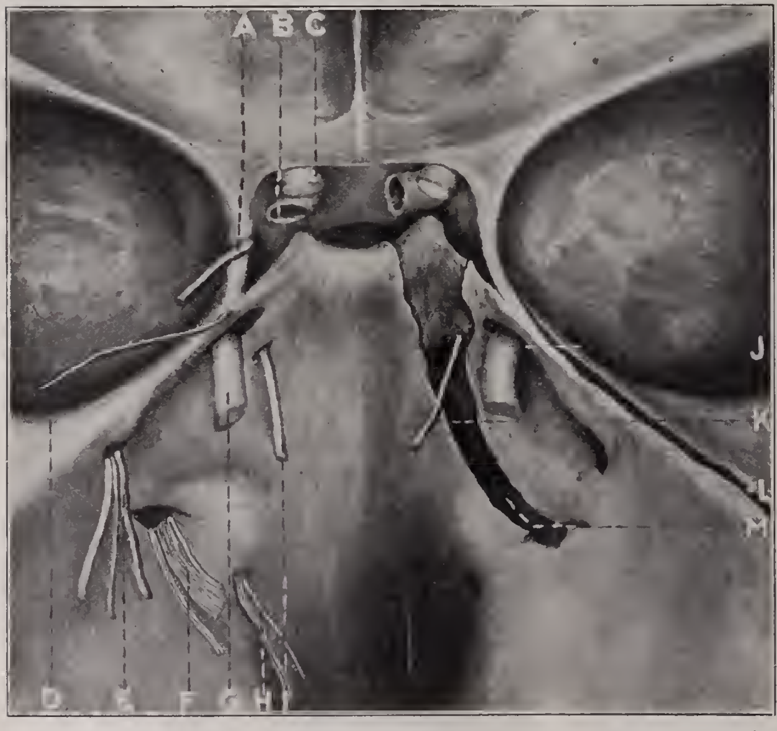

Fig. 3.—Drawing from wet specimen. The brain has been removed. On left side cranial nerves are seen entering dural openings. On right side dura has been removed to show sixth nerve entering connective tissue in posterior wall of cavernous sinus, a little below and behind apex of petrous pyramid. A, third nerve; B, carotid artery; C, second cranial (optic) nerve; D, fourth nerve; E, seventh and eighth nerves; F, ninth, tenth and eleventh nerves; G, fifth nerve; H, twelfth nerve; I, sixth nerve; J, fifth nerve entering Meckel's cavity for gasserian ganglion; K, sixth nerve entering connective tissue; dura has been removed; L, superior petrosal sinus; M, inferior petrosal sinus. (Illustration loaned by Dr. John M. Wheeler.)

To this latter opinion the author wishes to subscribe. Many cases of recovery have been reported where there was undoubted evidence of lateral sinus thrombosis, and where, usually on account of the attitude of the patient or the relatives, no operation was permitted. There are, no doubt, many other cases which have not found their way into the literature. This does not, and should not, alter our attitude toward the advisability of exploration and ligation where lateral sinus involvement is diagnosed, or even suspected. Many parallel instances in medical experience could easily be pointed out. When we consider the ease and speed with which the mastoid can be opened, the abundantly free drainage which it assures, and the slight shock to the patient which ensues when the operation is performed by competent hands, why should we hesitate at this possible means of heading off, or endeavoring to sidetrack, a virulent infection and wait until threatening symptoms supervene?

The following cases of Gradenigo's symptom complex I wish to report at this time:

CASE 1

Amelia K., aged 9, was referred to me on December 13, 1921. There had been an influenza three weeks previous, followed by an otitis media with spontaneous rupture six days before her visit to me. On examination, the left tympanic membrane was found to be normal. The right canal was filled with a profuse purulent discharge without odor. The membrane was red and bulging, with a fair-sized perforation posterior to the tip of the hammer handle. There was slight tenderness over the tip of the mastoid process, but none over the mastoid antrum. The temperature was normal.

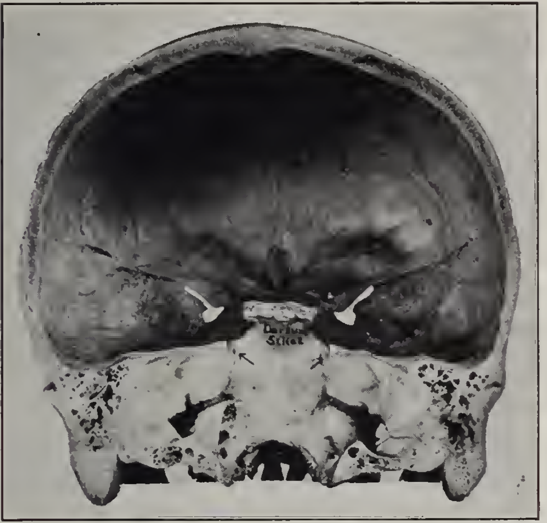

Fig. 1.—Vertical section through skull, posterior view. Arrows point to grooves at apices of petrous portion of temporal bones, in which the sixth cranial nerves lie. (Illustration loaned by Dr. John M. Wheeler.)

There was also present an *internal strabismus* of the right eye, which the mother said came on suddenly seven days before, or one day before the beginning of the discharge from the middle ear. The patient complained of paroxysmal headaches, together with intermittent pain in the right ear and over the top of the head.

The day following there was a moderate discharge of pus and less pain. The temperature was still normal. On the following day the temperature was still normal, the discharge moderate, but there was slight tenderness over the mastoid and a beginning *facial paralysis*. On the next day a simple mastoid operation was performed. The entire mastoid process was found to be filled with a thick, stringy pus, but there was little or no breaking down of the cell structure. A large mastoid cell communicated with the antrum. The lining mucosa of the antrum and other cells showed extreme thickening. Subsequent to the operation the temperature remained normal and the facial paralysis seemed to be improving. At the first dressing, four days after the operation, there was profuse discharge from the canal and a moderate discharge only from the mastoid wound. The patient returned to her home, where she was seen daily by my office associate.

Five days after her return home there was a sudden severe hemorrhage at 11:30 p.m. from the mastoid wound, which was controlled, with difficulty, by pressure. This was followed by another hemorrhage of less degree at 3:30 a.m. The following morning she was returned to the hospital, the mastoid wound opened under gas anesthesia, large blood clots removed, and the bleeding points on the anterior flap sutured. Temperature 104. The temperature continued high, but no signs of meningitis occurred until two days later, the patient dying seven days after the second operation. Autopsy showed the usual signs of meningitis, together with an abscess of the sphenoidal sinus.

CASE 2

Miss E. W., age 38, underwent a simple mastoid operation on February 7, 1923. There was an accompanying abscess of the right maxillary antrum. Recovery seemed to be progressing favorably until eight days after the operation, when the patient complained of diplopia. Examination by Dr. W. E. Bruner showed a well marked *external rectus paralysis* on the side of the involved mastoid.

At the daily dressings, notwithstanding the free opening in the mastoid cavity, it was noticed that the discharge from the middle ear was extremely profuse, the canal filling up after cleansing, almost before a view of the membrane could be obtained. In discussing his two cases, reported in 1920, Perkins says, "In both of these patients the discharge from the mastoid wound was so great that, to account for it, it was necessary to assume the presence of some internal reservoir of pus." This was certainly the impression which I received in this case, although the discharge was *not* so much from the mastoid wound as from the middle ear.

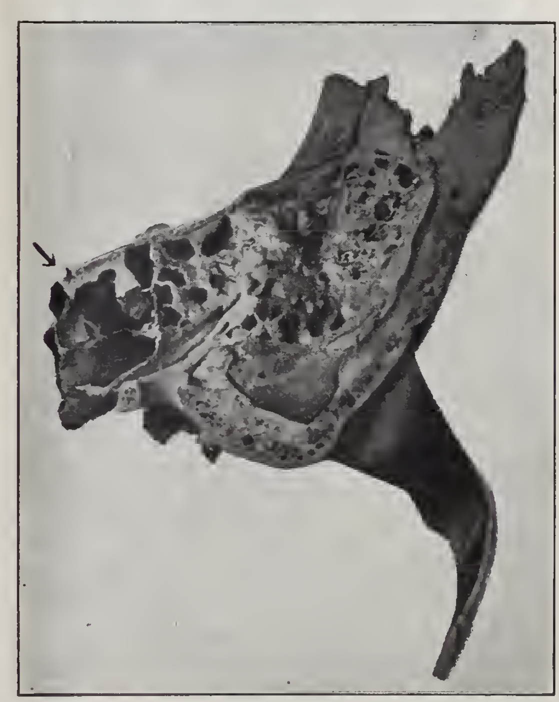

Fig. 2.—Temporal bone with pneumatic petrous pyramid. Inner table has been removed and a large cell is shown at apex directly under notch for sixth nerve. (Illustration loaned by Dr. Chas. E. Perkins.)

Recovery in this case was stormy and protracted, incidents thereof including transfusions, opening the lateral sinus (although no thrombosis was found), a deep-seated abscess in the neck, and endonasal operations on the right antrum and frontal.

Four weeks after its appearance the diplopia had completely disappeared, although there was still slight paresis of the external rectus. There was no trace of paralysis when the patient left the hospital seven weeks after the mastoid operation, or four and one-half weeks after the diplopia was first complained of.

CASE 3

W. E. S., physician, aged 54, had a simple mastoid operation on February 25, 1923, following an influenza infection. There had been a previous empyema of the opposite maxillary antrum. The mastoid was large, pneumatic and filled with pus under extreme pressure. There was very little granulation tissue, and no breaking down of cell structure. On account of slight temperature, accompanied by severe pain and restlessness, the mastoid was again opened four weeks later. A few cells containing pus were found extending well up into the zygoma. The discharge from the mastoid wound, as well as from the middle ear, had always been extremely profuse.

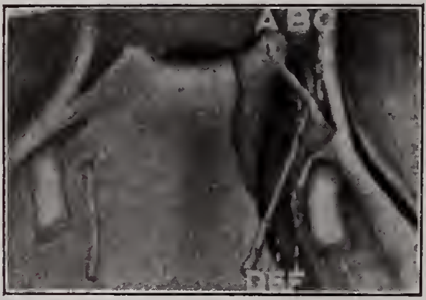

Fig. 4.—Further dissection to show sixth nerve entering cavernous sinus in relation to external wall of inferior petrosal sinus and in contact with apex of petrous pyramid. A, posterior clinoid process; B, carotid artery; C, apex of petrous pyramid; D, sixth nerve; E, inferior petrosal sinus; F, ligament. (Illustration loaned by Dr. John M. Wheeler.)

The patient left the hospital five days after the second operation, although there were still periodic attacks of severe pain over the side of the head. Three and one-half weeks after the operation the patient began to complain of diplopia, which increased, so that he could walk only with difficulty and was unable to drive a car. There was present a slight *paresis of the external rectus* on the involved side. The discharge from the middle ear and mastoid wound was still profuse. The diplopia, as well as the discharge, diminished gradually, the diplopia not disappearing entirely until eight weeks after its appearance. The mastoid wound is still open (October 4th) although there is no discharge and the middle ear is dry.

CASE 4

This case I am enabled to report through the courtesy of my associate, Dr. E. W. Garrett.

Mrs. H. S., aged 49, was seen January 22, 1923, complaining of pain in her left ear, following an influenza one week before. The right membrane showed slight thickening and retraction, the left some redness and thickening, the landmarks somewhat obscured. There was no bulging and no prolapse of the canal wall. Hearing in the right ear was normal; markedly diminished in the left. No paracentesis was made and the condition improved up to January 29th (seven days later), when there was sudden pain, followed by spontaneous rupture, with dischage of pus. The discharge lasted but two days and was followed by more pain, necessitating a paracentesis. The ear became dry again five days later.

There now occurred an involvement of the left ethmoid and frontal, necessitating operation, on February 23d (3 weeks after the paracentesis). Two days before this the patient complained of diplopia. There was now present a more or less complete *paralysis of the left external rectus*. The ear was dry, the membrane gray and thickened. Five days after the ethmoid and frontal operation the diplopia had almost disappeared, together with the paralysis of the external rectus. The left ear showed slight discharge, following pain during the night. This discharge became very profuse two days later and was accompanied by intense pain over the left side of the head. X-ray showed the mastoid cloudy, with probable breaking down of the tip cells.

March 6th (six weeks after beginning of trouble) a simple mastoid operation was performed. Pus and granulation was found in tip cells and extending well up into the zygoma. Tegmen was necrotic, dura exposed. Patient left the hospital twelve days after the operation.

ANALYSIS OF THE FOUR CASES

Cases 3 and 4 evidently belong to Gradenigo's group 1; case 2 to group 2, and case 1 to group 3. This case was evidently operated upon during the incubation stage of a meningitis, to which the patient ultimately succumbed.

Three of the cases presented symptoms of external rectus paralysis before the mastoid operation; only one after. In all, the course of the convalescense from the mastoid operation was characterized by a profuse discharge of pus. Of the four cases there were three recoveries and one death. In the three which recovered there was complete recovery from the external rectus paralysis as well.

CONCLUSIONS

1. The Gradenigo symptom complex is of sufficiently frequent occurrence to deserve the attention of every otologist.

2. The ophthalmologist should be continuously on his guard to see that external rectus paralysis of otitic origin is not mistaken for the more frequent forms of abducens paralysis, with which he is more familiar.

3. A sixth nerve paralysis, associated with pain over the side of the head and a discharging ear, should have an early, if not an immediate, mastoid operation.

4. Although mastoid operation, with the free drainage which it affords, does not insure relief, it is the best means which we have and certainly lessens the dangers of intracranial involvement.

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DISCUSSION

Dr. George M. Coates (Philadelphia, Pa.): The subject chosen by Dr. Chamberlin is, it seems to me, a fortunate one for a variety of reasons. Though, as he says, Grandenigo's syndrome, or triad, was first described nearly twenty years ago, for some reason but little interest has been manifested and but few cases have been reported in American literature. The average otologist (I cannot speak for the ophthalmologist) seems to consider the disease a medical curiosity which he will probably never run across, and for that reason fails to be on the lookout for it. I cannot help thinking that many cases have occurred that have either never been recognized, or, having been properly diagnosed, have not been reported. The subject is neglected by the textbooks, and I think largely also in our teaching. As it is one of common interest to ophthalmologist and aurist, it is peculiarly appropriate for presentation before this Section. In this country, Perkins has probably studied this condition more thoroughly than anyone else and he devotes a short chapter to abducens nerve paralysis of otitic origin in his Manual of Otology.

In spite of the seeming rarity of this complication of suppurative otitis media, and in spite also of the fact that many patients recover either with or without operation, the fact that there is a mortality among the reported cases of over ten per cent should impress upon us the very possible danger when a sixth nerve paralysis develops in a patient with a suppurating ear, and especially when there is severe pain in the distribution of the fifth nerve. While undoubtedly many cases recover without operation, I agree with Dr. Chamberlin and Dr. Perkins that operation should be done as a safeguard, although it is not quite clear to me how a simple mastoid operation will offer sufficient drainage for a collection of pus at the apex of the petrous pyramid. That the syndrome is due to such a collection seems to be well established. Perkins cites a case of Goris' where the apex was successfully operated upon and a pus collection drained, and more recently Gunnar Holmgren (Acta Oto-Laryngologica, 1922) drained an abscess cavity in this region, with recovery from the symptoms, although the static labyrinth had to be destroyed. In his case, in addition to the "triad" there were symptoms of impending meningitis.

There are many interesting features of Gradenigo's syndrome that would make profitable discussion, such as the downward pathway of the suppuration, at times, into the retropharynx; and why this symptom complex is not more common in basal meningitis where it would seem that the sixth nerve and gasserian ganglion would be encroached upon as easily as if the infection came by way of a pneumatic petrous bone. In the bacterial study of these cases, all those that I have seen, in which a bacterial diagnosis was made, report the streptococcus mucosus capsulatus as the offending organism. We recognize that this organism is a virulent one of the bone-destroying type, but is it the only one that will cause this complication? The fact that in the one hundred odd cases reported, the paralysis and pain occurred at a considerable interval of time after the appearance of the suppuration, in most cases, has not, I think, been satisfactorily explained. Three to six or even nine weeks after the inception of the ear disease is a long time for the development of a complication like this.

Eagleton, in his recent book on Brain Abscess, says that there is a mild papilledema seen in many localized suppurative intracranial processes such as that associated with an involvement of the cells at the base of the petrous pyramid with Gradenigo's syndrome. He thinks it is due to the cellular reaction to the toxic influence of an altered cerebrospinal fluid and says that all such symptoms disappear on evacuation of the adjacent mastoid area.

Recently cases have been reported by J. R. Simpson of Pittsburgh in the May, 1923, Atlantic Medical Journal. His two cases both recovered after a simple mastoid operation and were due to the streptococcus mucosus.

E. H. White, in the *American Journal of the Medical Sciences,* February, 1920, also reports two cases, in both of which the paralysis disappeared very rapidly. He reviews the histories of fifty-seven cases, in only twenty-four of which a mastoid operation was done. As a rule in these twenty-four cases there was not very much mastoid involvement. What becomes of the infection in the unoperated cases? It would seem a risky thing to leave infection in such a dangerous area undrained and it is hard for me to see how a simple mastoid operation offers sufficient drainage. Much as I like the blood clot method of primary closure, it should certainly never be used on a case showing abducens paralysis.

With four cases of his own, Dr. Chamberlin has had an unusual opportunity to study this symptom complex and he can, therefore, speak with authority. We owe him a cordial vote of thanks for presenting this subject to us.

Dr. Ewing Day (Pittsburgh, Pa.): I have had the fortune to have four of these cases, and they all presented characteristics essentially similar. They were all associated with otitis media or mastoid; they had marked meningeal symptoms, three being sent in as suspected meningitis. All four had characteristic cell development of the petrous portion of the bone; they were pneumatic, the cells extending far towards the inner tip. Each case had a distinct pressure rise in spinal fluid, the cerebral pressure ranging from 200 to over 400 (Krause scale). Two of them had cloudy spinal fluid, but sterile. All of them responded promptly to operation and recovered.

From a study of my own cases I believe we have in the Gradenigo syndrome, first a pneumatic petrous bone; infection of these cells causing, second, a circumscribed protective meningitis shown by increased cerebral pressure and sterile spinal fluid often cloudy. Third, this increased hydrostatic pressure extends into Dorrello's canal to the sixth nerve, causing paralysis of this nerve.

Dr. George W. Mackenzie (Philadelphia, Pa.): I wish to refer to a typical case. At least Grandenigo did not include the particular route taken by the infection in this case. This case was that of a young male adult who complained of severe tic douloureux of three or four weeks' standing, when he developed a fever quite characteristic of sinus thrombosis. On account of an unavoidable delay, I sent my associate, Dr. W. G. Shemeley, to serve as a substitute until I could reach the case.

Dr. Shemeley's findings were negative as to everything excepting three factors, offensive ear discharge that suggested caries, temperature range suggestive of sinus thrombosis and severe trifacial neuralgia. For quite a while I could not correlate these findings, but it occurred to me that the most logical sinus to be involved and at the same time produce fifth nerve neuralgia, was the superior petrosal. Accordingly, we proceeded to operate the mastoid after the radical method. After opening the sigmoid sinus and recovering nothing, I next exposed and opened the superior petrosal sinus, from which there was recovered a fair sized clot. Following the operation there was decided improvement and the temperature went to normal. At the end of five or six days the patient had a return of his fever and developed sixth nerve paralysis and died a few days later of complicating suppurative leptomeningitis. I do not know that any one has referred to the superior petrosal sinus as a pre-formed route for the spread of an infection that could lead to the development of this group of symptoms.

Dr. Robert J. Hunter (Philadelphia, Pa.): It seems to me that the important thing in the consideration of these cases is the mode of intracranial infection in ear disease. That brings up the subject that we so often discuss, as to the route which is taken. I think in some of these cases, the Gradenigo syndrome may be caused by direct extension, and it is quite possible that some of these cases do have pus, as Dr. Coates has said. I also think a great many have never had any actual pus infection, but have been cases with a protective meningitis, as described by Eagleton. In 1910 Perkins mentioned the superior petrosal sinus as a source of infection.

The point to which I wish to call particular attention is, that cases with this syndrome must be studied from a general standpoint aside from the ear, because we have a record of a number of cases in which the maxillary antrum, and especially the sphenoid, is involved. In those cases in which the sphenoid is involved it is to be assumed that there was direct extension, but in the cases in which we have a simple mastoidectomy clearing up the case, or in which we have a simple maxillary sinusitis along with the mastoid condition, it seems to me, some of these might be due to an actual toxic neuritis of that nerve, just as we have toxic neuritis of the eighth from pus involvement in another part of the body.

So to my mind, the cases with the Gradenigo syndrome are not all due to direct extension of the pus, and all are not due to meningococcic conditions; some of them, and especially those that clear up after a simple mastoid, may be due to toxic neuritis. I have seen two cases in which a paralysis existed at the time of operation, and a simple mastoid cleared them up.

Dr. Walter D. Chase (Bethlehem, Pa.): I am led to make some remarks on the etiology of this subject as the result of some instruction which I was privileged to have by a great teacher in Budapest during the last year. It is an element which has not been mentioned; therefore I expressly wish to refer to it. It is the anatomical fact of the lymphatic plexus which surrounds the internal carotid.

The internal carotid is so very close to the eustachian tube and the tympanum that infection very easily reaches these lymphatics. In the cavernous sinus the abducens nerve lies deepest of all the structures which pass through this "cavern," being bound down by the petrosphenoidal ligament, also, at the tip of the petrous bone. This last anatomical fact has already been mentioned to-day. These two anatomical features of the abducens make it very vulnerable to infection.

It seems to me it is not necessary, in order that this Gradenigo syndrome appear, that abscess formation at the tip of the petrous bone occur. We know that inflammation may proceed to any degree, up to and including pus formation, but degrees of inflammation below that of suppuration can produce this syndrome. When the streptococcus mucosus is the infecting organism, the resulting deep-ear complication symptoms may appear very late, as is characteristic of this germ.

Dr. William H. Sears (Huntingdon, Pa.): I saw my first case with the Gradenigo symptom complex in 1908 and reported the case briefly before this Section in 1909, under the title "Isolated Paralysis of the External Rectus in Acute Suppurative Otitis Media; with Report of Case." I have since seen two other cases, one of which was associated with acute mastoiditis requiring operation. During the operation we found large pneumatic cells, involving not only the mastoid but extending into the zygon as well. Another case had the same type of very free discharge from the external canal mentioned by Dr. Chamberlin; also with very little discharge from the mastoid.

A third case I saw in April of this year, when there seemed to be a fulminating mastoiditis. We operated two days after the first symptom and at this time the posterior superior wall was breaking down and there was a free discharge of pus from the middle ear. The x-ray showed a small-celled mastoid, upon opening which we found practically no pus until we got to the antrum, and then it was from the middle ear cavity. The mastoid was in an acutely congested state and the hemorrhage was very profuse.

One point involved was the agonizing pain in the temporoparietal region which was not controlled by anodynes or narcotics. This has been present in all these cases. A second point was that the patient did not complain of ear pain, but of pain in this region.

I think these cases are much more frequent than reports of them in the literature would indicate. In the last case the weakness of the external rectus was discovered by the patient asking me if there were two horses in a conveyance where there was but one. Upon rotation we found this palsy. The patient was improving rapidly and had this paresis not become a complete paralysis, as it later did, it could otherwise easily have gone unnoticed. This patient had spinal fluid under pressure, as did those mentioned by Dr. Day.

Dr. Chamberlin (in closing): First, in regard to Dr. Coates' remarks: Perkins' Manual I did not happen to see. I went over Phillips and Ballenger and a number of other textbooks, but could find no reference to Gradenigo's symptom complex. Dr. Eagleton's book, of course, is not a textbook. Dr. Coates refers to the insufficiency of drainage. I grant drainage is insufficient, but if we dam a stream near its outlet it has the same effect as damming it near its source, and if you remove the obstruction at the outlet I think it has the same effect upon drainage. So, even granting that the drainage secured is insufficient, I believe it is the best means we have. It is a question of whether you want to rely upon that means or upon the operation of Goris and Streit, carrying your operation clear to the tip of the petrous portion of the temporal bone. It seems to me the patient has about as good chance one way as another.

White and Hastings refer to two cases where, on account of insufficient drainage from the middle ear, the mastoid wound being open, they performed a radical mastoid operation after a previous simple operation. It was perfectly inconceivable to me, until I saw it myself, how that mastoid, laid wide open, would discharge so little, and yet there could be such a profuse discharge from the middle ear. I cannot understand it yet.

Dr. Day referred to the increase in intraspinous pressure. I did not do a spinal puncture in my cases.

Dr. Mackenzie referred to the pneumatic cells extending clear to the tip. Wheeler gives an illustration from one of Perkins' specimens showing a large pneumatic cell extending to the very tip of the petrous portion of the mastoid. I have three slides which were taken from Wheeler's article.

Dr. Hunter spoke of the involvement of the accessory sinuses. In my case of the child which died, we found an abscess of the sphenoid sinus. In the second case there was involvement of the maxillary antrum as well. So there might be a question whether the trouble was from the mastoid, or the accessory sinuses, or both. However, I think we have sufficient cases on record where there was no involvement of the accessory sinuses reported, to conclude that infection may come from the mastoid and middle ear, without involving the accessory sinuses.

Dr. Chase refers to the plexus along the carotid. Perkins also refers to that.

I apologize to Dr. Sears for not mentioning his article. It is a very difficult thing to find all these references in the literature. The titles are often misleading.

FIVE YEARS OF FRACTURE WORK; WITH SPECIAL REFERENCE TO OPEN REDUCTIONS*

H. E. McGUIRE, M.D.
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In presenting this series of 900 fracture cases seen in the last five years, my object is to demonstrate the fact that no one method can be used in all cases and that in the majority of cases the closed method is the one of choice, but open reduction becomes necessary when the fragments cannot be held in apposition.

Treatment on Admission: All cases are thoroughly cleansed over a large area adjacent to the seat of fracture, for example, in a fracture of the tibia the entire leg from the knee to the ankle is shaved. This is of the utmost importance because of the possibility of slight injuries to the skin being unobserved, resulting in the development of severe pus infections. Every surgeon has had experience with the bleb formation which occurs so often after fracture. After shaving, the leg is cleansed with benzene and iodin, one part iodin to one thousand of benzene, followed by 3½% iodin.

Fragments are reduced as near perfect as possible and proper splints applied. Following this, x-ray pictures are made, of which never less than two are taken, as one may not show the position of the fracture or may show the bones in perfect alignment, while another taken at a different angle will show a wide gaping at the seat of fracture.

Compound Fractures: The treatment depends upon the amount of traumatism of the soft parts. If there is a small, punctured wound, it is thoroughly cleansed and the case is treated as a simple fracture. Bad compound cases are operated upon at once, the operation at this time depending on the amount and character of traumatism at the time of the injury. In some cases it is necessary to cut away considerable tissue; in other cases we may place a plate, band, wire or nail to hold the bones in apposition for future dressing. Where it is possible to close the tissues at the time we do so. Some cases should be left open and treated with Dakin's or other solution, depending entirely upon the judgment of the operator.

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*Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 4, 1923.

The First Series is of 86 fractures of the skull; 17 of the series were operated; this does not include a number of bad compound cases which died before they could be operated. Eight of the 17 cases were operated by building up the contour of the skull so as to leave no depression at the seat of the depressed or compound fracture. Our method in these cases is to raise all fragments, if necessary, remove the pieces of skull, and, after cleansing them, replace fragments in as near the normal contour of the skull as possible, after which a drain is placed underneath the scalp for 24 hours. In cases treated in this manner we have never yet been compelled to remove any of the fragments and the patients have gone out of the hospital with a normal shaped head without the unsightly depression that is generally found as the result of depressed fracture, or compound fracture.

In fractures of the base where we have evidence of pressure due to hemorrhage and the patient is in an unconscious condition, we trephine both sides beneath the temporal muscle and incise the dura. It is surprising the amount of pressure sustained. In some cases, after incising the dura, blood will squirt eight or ten inches from the head as though the lateral sinus had been opened. After a few moments this pressure gradually subsides and in favorable cases the brain will pulsate. In ordinary fractures of the base with bleeding from the ears, we instruct the nurse to keep the ears thoroughly cleansed from blood clots. Never under any conditions plug the ear, as to do so would cause increased intracranial pressure. X-ray pictures of fractures of the base of the skull are unreliable. In a long series of cases it is surprising how often a negative report is made, while the postmortem shows comminuted fracture of the base. In fractures other than this the x-ray is very valuable. We do not use morphin under any circumstances until a diagnosis has been made, as it is impossible to differentiate between the effects of morphin and delayed hemorrhage.

Second Series: Forty-six fractures of the face, including upper and lower jaw and malar bone. Ordinary fractures of the jaw without any displacement may be held by a Barton's bandage, using muslin reinforced by a strip of adhesive. In other cases where there are two fractures, one on each side, it is sometimes impossible to hold the jaw in apposition with the ordinary dressing. In some of these cases we have had good success with small bands which fit around the teeth, placing two above and two below. The bands are made with a small catch so that wire may be twisted from one to the other, thus holding the jaw in any position desired. We find this method superior to wiring the teeth together, because wire irritates the teeth and gums and becomes very painful in time. When the bands are used there is no pain, as they are screwed tightly around the teeth and cannot be moved. In other cases it may be necessary to drill the fragments and hold them in apposition with wire. This is done under a general anesthetic and the wire is always removed before the patient is discharged.

Third Series: Fractures of the clavicle; 37 cases, of which 5 were open reductions. In these 5 cases it was impossible to get anything like a good result without operating. We used wire in 4 cases and a plate in one. The other 32 cases were treated by the ordinary method.

Fourth Series: Fractures of the spine, 15 cases. These cases are divided into two classes: (1st) those with partial paralysis and slight pressure on the cord, and (2d) those with definite cord injury and complete paralysis.

First Group: In the treatment of the partial paralysis, when the x-ray picture shows the body crushed and the fragments widely separated, we sometimes give an anesthetic, stretch the spine and attempt to proximate the fragments. It is surprising how well this can be done in some cases. We then place a plaster jacket from the axilla to the hips. This is done by placing the patient face down on an iron frame with one piece of canvas stretched the length of the body and two cross pieces, one at the shoulders and one below the hips, thoroughly pad the back and all bony prominences so as to eliminate all pressure. It is necessary to make the cast one inch thick over the back to prevent cracking when the patient is in bed. After the patient is in bed with the jacket on there should be sufficient arching of the back to permit of the hand passing between the cast and the bed. We leave these jackets on about two months and it has never been necessary to remove them on account of pain or discomfort. The legs are massaged every day and different forms of electrical treatments are given.

Second Group: Complete paralysis with

crushed spine and definite cord symptoms. In this class of cases we have performed a number of laminectomies with no marked success. We only operate when the patient requests that something be done and we do so with the hope that we may possibly be able to relieve the pressure. Placing these patients on a water bed prevents bed sores to a great extent. If possible we do not catheterize on account of the danger of developing cystitis. At present we have three of these cases, the oldest of nearly four years, and nothing to recommend for treatment.

Sixth Series: Fractures of the pelvis, 61 cases. In the treatment of fractures of the pelvis the first thing is to ascertain whether there is a rupture of the urethra. All our cases are catheterized upon admission to the hospital before anything else is done. If it is impossible to get a catheter into the bladder the case is sent immediately to the operating room. The operation consists of cutting down upon the perineum after inserting a sound to get to the point of the ruptured urethra, and then attempting to find the proximal end of the urethra, and if found inserting a retaining catheter in the bladder, pulling the free end of the catheter back through the penis with the sound and suturing the urethra around the catheter. If, as often happens, it is impossible to find the proximal end of the urethra, it is then necessary to do a retrograde operation, using a small piece of rubber tubing in place of the catheter, allowing the end to extend out through the bladder on the abdomen, so that the opening of the tube in the bladder may be kept free. When removing this tube it is good practice to attach a silk ligature to the tube and pull the ligature through the bladder and the penis, leaving it there for several days. The object of this piece of silk is that in a number of these cases it is hard to find the opening in the second portion of the urethra when it is necessary to catheterize, and the silk string may be used as a guide. These cases are disagreeable to work with and success depends entirely upon the amount of traumatism at the time of the accident. The ordinary fracture of the pelvis without any complication can be taken care of by the simple broad band of adhesive around the pelvis. These cases do very well and the patients are usually out of bed at the end of four weeks. I had only one case without bladder or urethral complications on which it was necessary to operate, and in this case the fragments were widely separated. Wire was used to hold the fracture together, although the x-ray picture did not show perfect apposition, and we had a good result. It is our belief that a Buck's extension on the leg of the side that is driven upwards is some help in fractures of the pelvis. Another thing we find in cases of injury to the pelvis is that there are not always symptoms of a fracture; cases have walked into the hospital complaining of pain in the inguinal region and an x-ray examination showed a fractured pelvis.

Seventh, Eighth, Ninth and Tenth Series: In speaking of fractures of the long bones it is better to discuss them together. In this series the following fractures occurred: Of the humerus, 55 cases, of which there were 12 open reductions. Of the forearm, 154 cases, of which there were 30 open reductions. Of the femur, 95 cases, of which there were 27 open reductions. Of the lower leg, 326 cases, of which there were 56 open reductions.

I feel there is no one method suitable for all cases. When we attempt to do an open reduction we have a motor saw for transplants, plates, bands, wire and nails ready, for as a rule we do not know what method we are going to use until we cut down upon the fracture. Many times, judging from the picture, a certain method seems the best to use, but after we have cut down upon the fracture we find some other method would be better, as there are lines of fractures that the x-ray did not show. After the use of a foreign body fixation we always remove the plate, band, etc., before the patient leaves the hospital. For example, in fractures of the femur where a band or plate is used, it is removed about the fifth week and the second incision is healed before the patient is out of bed.

In operations on the tibia or any bone near the surface, a local anesthetic is sufficient and I believe it is a bad practice to allow these cases to go home with the foreign body at the seat of fracture. Slight traumatism may later set up an irritation and necessitate its removal. In many cases of transverse fracture not possible of reduction under an anesthetic, we have at operating found intervening muscle. When this happens the space between the fragments is thoroughly cleansed, placing them in apposition and splinting the limb, not using any foreign body. This is an ideal way to treat a fracture, but unfortunately this procedure is practical in only a small percentage of cases. Bad compound fractures are operated upon admission to the hospital. All damaged tissue is removed, and a plate, wire or nail is used, according to the mechanical requirements of the particular case, allowing it to remain in position until the bones are held by provisional callus. The question as to whether the wound should be closed or allowed to remain open depends upon the judgment of the operator.

Technic: Where we expect to do an open

reduction we generally wait at least a week. The arm or leg is thoroughly cleansed the day before the operation and when the patient is on the table it is again cleansed and painted with 3½% iodin, not touching anything with the hands that come in contact with the area of the incision. We believe it is possible to do anything with the bone that can be done with soft tissue, providing we keep in mind, (1st) not to traumatize the soft tissues, and (2d) not to traumatize the bone at the seat of injury, making no unnecessary manipulations or tearing the tissues about the bone. Our success is due to constant attention to these precautions. In closing the incision we avoid using catgut ligatures in the muscle. When closing skin and facia we place two or three deep sutures of silkworm-gut through the muscle to approximate it. Sutures in the muscle must be tied lightly or they will cut through.

Conclusion: The closed method of fracture treatment is the one of choice. If the fragments cannot be kept in apposition, then open reduction is best. There are several objections to open reduction: 1, sepsis; 2, shock; 3, increased length of disability.

Sepsis: Bone work requires absolute perfection in technic. The technic of ourselves and our assistants must be such that nothing but instruments touch bone or soft tissues in the field of operation. Much depends on the judgment of the operator as to when to operate. I frequently decided against operation with the patient on the table with a break in the skin or a spot which looks suspicious. This is one class of cases in which no risk can be taken.

Shock: I do not believe that my cases of open reductions suffer as much as the ordinary major operation. If the operator is accustomed to doing bone surgery, knows what he is going to do, makes up his mind as soon as he sees the condition of the fracture which type of fixation is best, works fast, prevents loss of blood and does not traumatize the seat of fracture, shock will not occur.

Increased Length of Disability: I concede that open reduction does increase the length of disability but it is better to return to work in a normal condition rather than to return with a malformation which will be carried through life.

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DISCUSSION

Dr. T. Turner Thomas (Philadelphia, Pa.): Dr. McGuire has given us a broad, bird's-eye view of fractures based upon his own experience which probably differs from that of most general surgeons. Every day he treats a class of patients exposed to greater violence than those which fall into my hands, so that it becomes a little difficult to discuss his many kinds of fractures.

The importance of fractures has been emphasized and reëmphasized many times but hardly yet overemphasized. An illuminating statement on this phase of the subject appeared recently in Surgery, Gynecology and Obstetrics, and deserves to be repeated. Secord, of Ontario, said that of 124 damage suits for malpractice against doctors, 78, or 66 per cent, were based on fracture cases. In 20 per cent of the total 124, verdicts adverse to the doctor were rendered, and all of these were fracture cases.

In the usual fracture case one has difficulty in acquiring that feeling of confidence and relaxation that comes so readily after operation on a clean appendix or an inguinal hernia. Unpleasant surprises develop too easily and too frequently. In my opinion the key to the whole situation is the correction of the deformity and the maintenance of the correction until good bony union is obtained. It has seemed to me that overlapping fragments unite more readily than after exact end-on reduction by the open method, but the end results are better by the latter treatment.

Our chief troubles occur with fractures of the long bones, and for me these are divided into two chief classes: fractures of the cancellous ends near the joints, and fractures of the compact shafts. I do not worry much about the correction of deformity in the fractures of the ends of the long bones. I can usually accomplish good reduction in the overwhelming majority by the closed method. Occasionally when too long a time has elapsed since the fracture or where a great deal of swelling, ecchymosis and edema exist, I cannot reduce, and then cut down on the fragments, reduce, and usually nail the fragments. Infection very rarely follows and then is usually not troublesome. I can accomplish very little, however, in the closed reduction of deformity in fractures of the shafts. Some surgeons seem to be very well satisfied with their reductions but the x-ray proof is very scanty. Measurements may be satisfactory but I should prefer to see the x-rays, one taken before the reduction and another taken afterward. Moderate overlapping, with good alignment and good union may give good function, but this will depend upon personal opinion as to what is good function. Two years ago before this Society I reported the case of a professional baseball player who had had a fracture of the leg with good alignment of the fragments, good union, one inch shortening and apparently good function, but he had to stop playing professional baseball soon afterward. Ordinarily we would call this a good functional result but it put him out of business. We have been told recently that in fractures of the femur in children, with overlapping, the Bryant's vertical traction method of treatment which we have thought so nearly perfect, accomplished no reduction of the deformity, but that in a considerable number of the cases lengthening of the shortened bone occurred later. I have followed a few cases of the same fracture in adults treated by the traction method in which lengthening did not occur. In children there is not much shortening or displacement of the fragments.

Probably most cases will continue for a long time to be treated by the traction method but the tendency seems to be in the direction of the open method because of the better end results. The problem is a very old and troublesome one but the answer must continue to be decided in each case by the doctor in charge. Dr. McGuire could not decide in any case what he would do until he came to do it. That is the attitude of most surgeons at the present time. It is very difficult to decide what the end results are by the different methods. I have seen some poor end results by the traction treatment in the hands of good surgeons. Among surgeons or family physicians treating these cases there are two extremes. At one end is the country doctor without hospital facilities. He can consider only the closed method. At the other end is, not the usual teaching surgeon, but the industrial surgeon with every hospital facility and full responsibility, who usually finds his field restricted largely to fractures. His success depends chiefly upon his results in fracture cases. He is working on a commercial basis, or his results are estimated on this phase, and he must give a stricter accountability than most other surgeons. From a limited acquaintanceship with the methods of some of the best surgeons of this state in this field I have the impression that they are tending toward the open method in cases with troublesome deformity. One of them said recently that he could not afford to have one of his patients go before the compensation board with the x-rays of a fracture showing bad displacement of the fragments and that in most cases he could not prevent this possibility except by the open method of treatment.

Dr. George M. Dorrance (Philadelphia, Pa.): I should like to say a word about fracture of the jaw. Do the teeth articulate correctly? If not, then you have not set your fracture correctly because the man cannot chew well. There is no excuse for wiring the bone. It will cause necrosis, with a subsequent loss of a portion of the bone. There is no excuse for plating them. The bands around the teeth are difficult to introduce because the teeth are so close together. We find wiring is the most universal method used and it does give very exceptional results. After three years of very careful work, we have reduced the time for the making of an intermaxillary splint from 3 days to 59 minutes. A celluloid splint can be made in 59 minutes. It has a place for the teeth to fit. You introduce it upon the upper teeth and then reduce the fracture of the lower jaw by pressing the fragments upward until they go into the spaces for the teeth. This insures accurate approximation of the teeth. If you do not wish to cement it on, you can put on a Barton's bandage. If the fragments are overlapping you have to set the fracture of the jaw the same as you would a femur or any other bone. I think a Barton's bandage is very bad treatment for a fracture of the lower jaw. This splint was made after a great many cases had been studied. I do not think any other type of fracture is as badly treated as fracture of the lower jaw. The special advantage of this celluloid splint is that it can be made up in 59 minutes. The best we had last year for a metal splint was six hours.

Dr. John J. Buchanan (Pittsburgh, Pa.): I want to compliment Dr. McGuire on his excellent work. In most of what he has said, I fully concur.

In approaching a fracture, a man should ask himself, "How can I get the most successful result? Will the functional result be better by the use of external means or by internal appliances through operation?" He should ask himself this as soon as he sees the patient and he should get an x-ray at once. If he cannot make up his mind that day he should think it over that night and determine the matter the next day. If he cannot make up his mind the next day he certainly can do it the third day. Do not try as some men do, to make extension in cases where no amount of extension can secure approximation of fragments. Do not employ apparatus which cannot possibly assist reduction, but only kills time. Let not the golden opportunity for open reduction slip by. The golden opportunity is within the first week. If you cannot determine in the first week whether a fracture should be operated on, you ought not to treat fractures.

If you determine to operate on a fracture—and every surgeon should determine to operate on a good many—the first thing is to expose the parts; the second thing, to put the fragments as nearly as possible in normal relationship; the third, to fix them there in some way. If we can do that by interlocking or position, without any internal fixation appliance, we do it. Usually, however, some direct fixation device is necessary. What shall we use? The simplest of all is a loop of silver or iron wire passed through drill holes that will give you enough fixation so that the bone will not slide away after you have put it in place. The second in value, especially for oblique fractures, is the Parham band. It far surpasses the Lane plate in power of fixation, but is not adapted to transverse fractures. Lane's plate is very useful in many cases. (It is not exactly Lane's plate, because it was used long before Lane used it, but he made it successful.)

The next question is, "Shall the foreign body be removed after it has served its purpose?" I should hate to leave a Parham band in the femur of a growing child, because it would act like a wire around a growing tree. Bone will grow around it till it is embedded and its removal will require the chiseling away of the new bone over the clasp of the band. The exposure and removal of a buried band is not at all difficult.

What is the consequence if a plate, band or wire remains quiet in or on a bone? I have scores of patients with embedded wires, plates and bands implanted many years ago. I see these patients occasionally. They live around the neighborhood and come in to see me once in a while for other things. I ask them if they have any trouble from the foreign body. They always say they have not. I think it is a myth that that little aseptic mucous stuff which always exists around embedded metal causes rheumatoid pains.

Now let me say a word about fractures of the lower jaw. The best splint of all has not been mentioned. This is the wire frame splint of Hammond, pictured in Helferich's Atlas of Fractures and Dislocations. It is a silver wire frame which encircles the teeth of the lower jaw and is fixed by cross wires between the teeth. A corresponding wire frame is fixed to the teeth of the upper jaw. These two frame splints are fixed together by a few wire loops. There is no anesthesia; there is no cutting; there is no pain; there is no drilling of the bone; there is exact and permanent alignment. No special instruments are required; and anyone can do it who will take the trouble to find out how it is done. If a surgeon uses this splint once, he will never again use an interdental splint; he will never use a plate or a wire through the lower jaw. With this wire splint in place, no external bandage is necessary.

Dr. Dorrance (Philadelphia, Pa.): Did you ever use an intermaxillary splint?

Dr. Buchanan: I never could get a dentist to make one inside of a week.

Dr. Dorrance: That is the point. We now make a splint in 59 minutes, a celluloid splint.

Dr. Buchanan: It is an abomination; you cannot keep it clean.

I want to speak of these cases of crushing of the leg where loaded wagons or coal cars have passed across the limb, where the bone is crushed and the vessels so crushed that the leg is distended with blood, the foot is cold and it would appear to anyone, before the surgeon starts, that the leg is lost.

In this city lived a surgeon, Dr. Albert G. Walter, who flourished from 1850-70. He was the greatest surgeon who has ever practiced in Pittsburgh, and his surgery was plastic and accidental. He wrote a book which was issued in 1867, just after Lister brought out his work, and it is entitled "Conservative Surgery," and this is what he says: "When you come to a case of severe crush of a limb, the bones comminuted, many muscles cut off, many vessels so injured that it is a distended mass and you feel that it is hardly anything but a bag of bones and skin, make one or more long and deep incisions, pick out the completely loose fragments of bone, drain with strips of oiled linen and apply a fixation splint. What is the effect? All the confined blood gushes out. The vessels that are still intact, and there are usually some vessels remaining, resume their function, the tension being taken off. Circulation returns to the foot and the limb is saved. Owing to the free drainage there is no cavity for serum to collect and severe infection is prevented."

This plan of Dr. Walter's is a limb-saver and sometimes a life-saver in these severe crushing injuries, and I can recommend it from personal experience. To be of value, however, this method must be applied with promptitude and thoroughness.

Dr. Gustav F. Berg (Pittsburgh, Pa.): I should like to congratulate Dr. McGuire on his use of both open and closed treatment of fractures. It is impossible to treat certain fractures successfully, and the closed method saves worry. The Balkan frame and the advice of our own Dr. Buchanan are our sheet anchors. He has shown that extension by ice tongs, such as Pearson, of England, employed, must be applied early in fractures of the long bones. Many surgeons admit that there are certain types of fracture that they cannot reduce perfectly and they are satisfied if they get one-third apposition with some function of the part. We must remember that the chiropractor and the osteopath now take x-rays, and even though a good functional result may be obtained, under the instruction of a practitioner of one of these cults a patient may go into Compensation Court, refusing to go back to work until the alignment of the bone is anatomically perfect.

There are several things in Dr. McGuire's paper to which I wish to take exception. I do not believe it is absolutely necessary to remove a bone plate five weeks from the time you operate. I doubt whether bone unites properly in five weeks, although callus may be thrown up. Using the Lane technique and having proper armamentarium, I think it will not be necessary to take out more than five per cent of bone plates put in under antisepsis.

I do not use the Parham band, but I do make use of the principle of it, substituting aluminum. During 1916 I operated on quite a number of cases in children, and see no reason to remove the band.

Another thing which we should all use more is very cheap, and you can all make it or have it made. Take a femur from a steer, government tested, and make your own bone nails and screws and intermedullary pegs. I have been using these for seven or eight years, and see recently that the Mayos and also a surgeon of Toronto are now advising them. I can assure you that they are very, very successful.

Dr. McGuire (in closing): I do not want to give the impression that I take every plate out on the fifth day or the fifth week. I do take them out before the patient goes home.

One objection I have to leaving the band in place is that I have had refractures on the site of the band.

I have heard of Dr. Buchanan's jaw splint, but have not used it. I will get his reprint and see what I can do on the next case.

COMMON PARASITIC DISEASES OF THE SKIN IN CHILDHOOD*

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The average physician, admittedly, knows less about cutaneous outbreaks than the other branches of medicine. This, therefore, is my excuse for writing on the common diseases of the skin.

Cutaneous outbreaks resemble each other rather closely and careful observation is necessary to make a diagnosis.

The subject of common parasitic skin diseases naturally falls into two main divisions, namely, animal parasitic diseases and those due to vegetable parasites. Those under the former heading which will be considered are scabies and pediculosis, and under the latter, ringworm and contagious impetigo.

Scabies is characterized by a generalized multiform eruption, consisting of papules, pustules and vesicles, the diagnostic burrow and intense nocturnal itching. The face may be attacked in the infant nursing from the breast of a scabietic mother. This is the one exception to the rule that the face is free from involvement in this disease. The outbreak is most severe on the flexure surface of the extremities and the anterior surface of the trunk. The fingers, hands, toes and feet show the outbreak markedly. The diagnostic lesion, the burrow, a minute zigzag line is found in areas of heat and moisture.

Pediculosis is caused by three varieties of lice, the head, body and pubic. As the latter lays its eggs on the body hairs children are exempt.

Lice of the body is seen less in children than in adults. In pediculosis corporis (lice of the body) we look for long linear scratch marks and punctate hemorrhages. The face, hands and feet are not involved. In other words, the outbreak is observed on the covered parts. The outbreak is largely seen on the exterior surface of the extremities and the posterior portion of the trunk.

Lice of the head is largely observed in children, to a lesser degree in women, and only occasionally in men. Small pinhead sized, oval, pearl-like bodies adherent to the scalp hairs are diagnostic. Itching is intense and scratching gives rise to pustular lesions and not infrequently to secondary enlargement of the posterior cervical glands.

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Ringworm is divided into several varieties, but from the childhood point of view two types at least may be excluded, namely, ringworm of the beard (tinea sycosis) and ringworm of the pubic and axillary regions (tinea cruris). So-called eczematoid ringworm is likewise less common in the child than in the adult. The two varieties of ringworm, therefore, to be considered are those of the scalp and skin surface.

Scalp ringworm occurs only in children. The common variety is characterized by partial hair loss in a rounded or irregular-shaped area, broken off hairs, prominence of the hair follicles, and a whitish or yellowish scale. The fungus can be readily demonstrated by placing a few of these broken off, easily extracted hairs in liquor potassæ on a glass slide and examining under the microscope. The presence of shiny bodies (spores) and mycelian threads proves the diagnosis.

Ringworm of the skin surface may be observed on any portion but is usually seen on the exposed parts, the face, the neck, the wrists, and the backs of the hands. One-quarter to one-half dollar sized reddish, scaly lesions, with a rather clear center and sharply marginated border are characteristic. There are usually but a few lesions present, frequently only one.

Impetigo contagiosa is characterized by an outbreak which begins as a vesicle, later becoming pustular and after reaching the size of a pea or almond the pustule breaks and a yellowish crust is formed. These lesions are separate and distinct and tend to involve the face and scalp. The outbreak is frequently secondary to lice in the scalp. Children are more frequently attacked than adults.

There is a rather unusual variety of impetigo, in which the vesicles enlarge in size, becoming blebs. This bullous impetigo contagiosa is a disease largely of infancy. If there are a large number of lesions or if the mucous membranes become involved, death may result.

The parasitic skin diseases which have been mentioned should be differentiated from the other common outbreaks on the skin in children.

Scabies and pediculosis corporis should be separated from urticaria, eczema, psoriasis and seborrheic dermatitis. Urticaria does not produce a multiform eruption but lesions of the one type—wheals (hives). Any portion of the cutaneous surface may be attacked by these transient lesions. Itching may be present at any time rather than exclusively at night. Papules may develop secondary to urticaria in children. If so, there is a distinct tendency for the face, extremities and buttocks to be attacked, while the trunk is almost or entirely free of lesions. Eczema may attack all or only a portion of the cutaneous surface. There is a tendency towards the formation of reddish patches which fade away into the sound skin. The patches are covered with a scale or crust. Itching is present both day and night. Psoriasis tends to attack the scalp and extensor surface of the extremities. Silvery-white scales on reddish marginated patches are characteristic. Itching is absent or slight. Seborrheic dermatitis shows the outbreak on areas of hair, heat and moisture. Itching if present may occur at any time. Ringworm of the scalp has to be differentiated from seborrhea (dandruff), seborrheic dermatitis, psoriasis, eczema and alopecia areata. The differentiation should be easy if but a few points are remembered. Seborrhea shows only a scaliness; seborrheic dermatitis exhibits greasy scales on reddish patches; psoriasis silvery-white scales on reddish patches; eczema presents yellow, nongreasy scales on reddish patches. None of these diseases show patchy hair loss, with broken off hairs and prominence of the hair follicles such as we find in ringworm. Alopecia areata shows absolutely bald areas, less prominence of the hair follicles than normally, no scale formation and is more apt to occur in the adult.

Impetigo contagiosa should be differentiated from other diseases of the skin in which pustules are observed. Cutaneous outbreaks, such as tinea sycosis (ringworm of the beard), sycosis vulgaris, acne vulgaris, acne rosacea and eczema should be excluded. Tinea sycosis and sycosis vulgaris show pustular lesions but are only observed in the bearded region and mustache area of the adult male. Acne vulgaris exhibits pustules, papules, blackheads and sebaceous cysts, but usually does not develop until after puberty. Acne rosacea does not appear until twenty-five years of age or later. Contagious impetigo, therefore, has to be chiefly differentiated from the pustular form of eczema. In the latter the lesions run together and form reddish patches which fade away into the sound skin. On these reddish patches we find pustules, oozing and crusting. Itching is intense. Any portion may be attacked but the outbreak is frequently found on the faces of babies.

The diagnosis of skin diseases should offer very little difficulty if the physician has a definite understanding of the primary and secondary lesions of the skin and a knowledge of the distribution of the common eruptions.

DISCUSSION

Dr. William H. Guy (Pittsburgh, Pa.): The difficulty of discussing a paper of this kind lies in the fact that most of the diseases discussed are things with which we are presumably all so familiar that we take too much for granted. This, however, does not detract in any way from the importance of the presentation, as it is only by constant repetition of facts that we drive home the salient points in differential diagnosis. The differential diagnosis of tinea capitus and alopecia areata is of vital importance and offers some difficulties in a few cases. The sudden onset of a complete alopecia, the lesion being circular in shape, in which there are no broken off hairs nor signs of inflammatory reaction, is of course in favor of alopecia areata. The fact that tinea capitus begins as an inflammatory macule or papule, spreading peripherally, in the course of a few days or a week followed by a falling of hair, and scale formation with numbers of broken off hairs at the edges, favors the diagnosis of tinea capitus. In this condition, as well as in other tinea infections of the body, generally, recourse to a simple laboratory procedure may serve to clinch the diagnosis. Removal of the scales, or better, broken off hairs from the periphery of the lesion, placing it on a slide with a few drops of a 30/40 potassium hydrate solution, gently heating over a Bunsen burner, examination being made with a high dry lens, reveals the presence of mycelia and spores in a fair percentage of cases. With the diagnosis made, treatment is comparatively easy.

The presence of pediculi in the scalp is of importance not only in establishing the diagnosis of pediculosis capitus, or to obtain relief, but also in a great variety of inflammatory conditions of the scalp, particularly exudative lesions behind the ears. The presence of the parasite itself is often difficult to establish because of the fact that people with usual cleanliness remove it, or, if actually present, it is in such small numbers that it is very difficult to find. The ova, however, are naturally always present, and are noted as small pear-shaped masses attached to the hair. One point in passing that is worth commenting on is the fact that in the treatment of this condition we have to deal not only with the destruction of the parasites but the removal of the ova as well if we anticipate permanent results. The ova are attached to the hair shafts by a cement substance that is insoluble in water but is soluble in dilute acids of different kinds. Therefore the rationale of the old-fashioned treatment with vinegar and the fine comb.

Impetigo of the usual variety deserves attention in a review of this kind because it frequently is aggravated by medication which is too strong and because it may be the source of the less frequently seen but infinitely more dangerous bullous variety which, without the best of precautionary measures, may assume the proportions of an epidemic, particularly in institutions. It is not so many years since this condition, now known to be of streptogenic origin, was known as pemphigus neonatorum. Without the best of treatment it carries with it a rather surprisingly high mortality, and inasmuch as it is easier to prevent than cure, isolation and rigid quarantine should be practiced in each case.

Dr. Stanley Crawford (Pittsburgh, Pa.): I have not very much to add, because Dr. Knowles has so ably covered the subject, but a minor thought comes to mind in talking about impetigo contagiosa, which is quite a contagious condition. I certainly feel that general hospital cleaning of the door knobs and telephone receivers and such surfaces as are touched by nurses and other people going around the hospital, materially aids in reducing the spread of this condition. That is a minor thought, yet I feel it is of great importance. We have been doing that at the West Penn Hospital, and we do feel it has helped.

Dr. John M. Higgins (Sayre, Pa.): I should like to ask the essayist to say a few words upon impetigo among the newborn.

Dr. Knowles (in closing): Regarding impetigo of the newborn, the subject has just been covered thoroughly by Dr. Guy and Dr. Crawford, that is, the bullous type. In regard to the bullous type of impetigo, it is a very serious condition; in other words, I have written at least two papers on the subject regarding certain epidemics. In an epidemic in a large maternity hospital in Philadelphia some twelve or fourteen years ago, out of thirty odd cases we had eleven deaths. This bullous form of impetigo spreads like wildfire through a babies' ward. These large blisters develop and spread fairly generally over the skin surface, and not infrequently attack the mucous membranes. When the mucous membranes are attacked the nutrition of the child is largely interfered with, whether it is a bottle or nursing baby. Inanition develops and the child dies. In at least two or three other epidemics that I have seen in Philadelphia the mortality rate has been as high as fifty per cent.

Under these circumstances, agreement with what Dr. Crawford has just said, every possibility of infection should be absolutely eliminated in regard to the spread of the contagion, even in the care of the door knobs and so on. As soon as a case of this description develops in a child or in an infant the patient should be isolated to just the same extent practically as if you had a case of diphtheria, not so much from our own point of view or that of the nurses, as for other infants or other young children who may be in the ward. It is an extremely important point because of the high mortality rate.

As Dr. Guy has mentioned, it was originally described as pemphigus neonatorum, but as long as it has been proved so extremely contagious it could hardly be classified as a pemphigus because pemphigus is noncontagious. That is the reason the classification has been changed to the bullous type of impetigo which is extremely common in infancy and childhood.

FACTS THAT GOVERN THE PROPER DIET IN NEPHRITIS*

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In the treatment of nephritis, one of the most important of the therapeutic aims is the reduction of those digestive and metabolic processes which give rise to certain waste products that must be eliminated by the kidney. Such a reduction in these waste products not only lightens the demands made upon the kidneys but renders less likely the toxemia incident to retention. This reduction is brought about in large part by means of the diet. Therefore, aside from attempting to remove the cause, the diet is the first consideration in treating any case of nephritis. Being such an important part of the therapeutic régime, it is imperative that the physician understand clearly the principles upon which the proper diet is based.

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These principles are simple and can be applied easily in routine general practice. They are as follows: The kidneys' sole function is the elimination of certain waste products of digestion and metabolism. These waste products can be divided into several groups: First, nitrogen bodies, the most important of which are urea, uric acid and creatinin; these are the residues from the protein metabolism. Second, acid bodies, chiefly phosphoric and sulphuric acids, residues of the metabolism of meats and certain cereals. Third, salts, principally sodium chlorid, ingested with food, entering in some way into normal metabolism and excreted in the urine. Fourth, water, which, like salt, is not strictly a waste product, but is ingested, enters into metabolism and is excreted in large part by the kidneys. There are other waste products that are known to be excreted in the urine, the significance of which is not yet understood. Examples of these are enzymes and pigments.

There are, then, for clinical consideration, four groups of waste products which must be excreted by the kidney. The first important consideration, therefore, in outlining the diet, is to understand the origin of these waste substances in food and metabolism. Another, almost equally important fact is that each of these groups is excreted by an independent mechanism. Thus the functional ability as regards the nitrogen group may be seriously impaired and yet be quite normal as regards the other groups; or, the power to excrete salts may be seriously interfered with, while the nitrogen and acid substances come through normally. This principle of independence of excretion should be borne in mind because in certain cases it may be necessary to reduce only a few of the waste products, instead of all of them. For example, most cases of chronic parenchymatous nephritis show marked reduction of functional activity as regards chlorids only; the nitrogen, acids and water being eliminated with the greatest of ease. The diet of such cases need only be free from salt; any other restrictions are an unnecessary burden to the patient.

The determination of the functional capacity of the diseased kidneys as regards the separate groups of waste bodies is, of course, necessary. A workable, clinical estimate of these functions can be arrived at by a few simple tests and by clinical observations. Thus, the functional capacity as regards the nitrogen group can be determined by the phenolsulphonephthalein test; clinically, retention of waste nitrogen causes headache, drowsiness or coma, high blood pressure and gastro-intestinal disturbances. The functional capacity as regards acids, if sufficiently lowered to cause retention, gives rise to shortness of breath. If there is impairment in the ability to excrete either water or salt, edema will promptly develop. With this clinical knowledge and a few simple tests to draw upon, the physician can determine renal functional activity, as regards the various groups of waste products, with sufficient accuracy to use in prescribing a rational diet.

Therefore, in preparing to outline the diet in each case of nephritis, the physician must first determine which groups of waste products are being excreted with difficulty. With this as a basis, a diet is outlined that will reduce to the minimum those waste products which are difficult of excretion. In order thus to arrange the diet he must understand the following facts as to the sources of these waste bodies.

The nitrogenous waste products—urea, creatinin, uric acid, etc.—are the end products of protein digestion and metabolism. There is a minimum below which protein metabolism cannot be reduced, tissue protein being utilized. Hence it is impossible entirely to stop the development of this group of waste substances. They can, however, be markedly reduced by placing the protein intake at the point which is just sufficient to maintain nitrogen balance. This is usually given as two-thirds of a gram of protein to each kilogram of body weight, or fifty grams for the average individual; an amount that is easily supplied by three ounces of cheese, the whites of three eggs and five slices of bread. Such will answer the protein requirements for a prolonged diet. For short periods, in severe cases, all protein may be removed from the diet.

The acid bodies are derived from the digestion and metabolism of certain foodstuffs in which the acid residue proponderates over the basic. Those foods in which there is a well marked preponderance of the acid radicals and which consequently increase the amount of acid that the kidneys must excrete, are the following: meat, egg yolk, fish, oatmeal and wheat flour. On the other hand, there are certain foods in which the basic elements preponderate and which aid in the neutralization and excretion of the acid radicals. In general, these base-forming foodstuffs are the fruits and fresh vegetables; but especially rich in the basic elements are beans of all kinds, beets, peas, potatoes, carrots, celery, lettuce, oranges, lemons and canteloupe.

In brief, meats and cereals leave acid residues, whereas fresh fruits and vegetables, including potatoes, leave basic residues. To help relieve the strain on the kidneys and to guard against acidosis, the patient should take liberally of oranges, lemons, peaches, canteloupe, beans, potatoes and fresh vegetables.

Where there is difficulty in the elimination of salt and water, edema quickly becomes evident. In such case the diet should be as nearly salt free as possible. To administer an absolutely salt free diet is practically impossible, for all organic substances contain salt. A total chlorid intake as low as five grams in 24 hours is obtained only by scrupulous care, all food being specially cooked salt free. However, such a small amount of salt can usually be eliminated by the kidneys even though the functional capacity for salt is markedly reduced. When there is difficulty of excretion of salt, water is also retained; and when there is difficulty of excretion of water, salt is retained. Hence, no matter which is the primary factor, the clinical picture is the same and the dietary measures are identical. The salt intake is reduced to the lowest possible point and water intake also is restricted to 1,000 c.c. or less.

There has been considered, so far, only those foodstuffs which leave a residue that must be excreted by the kidneys. The waste products of the normal metabolism of fat and glucose are carbon dioxid and water; the former is eliminated through the lungs and the latter may be eliminated through the lungs and skin. Therefore, fat and sugar metabolism does not make any demands upon the kidneys and should be relied upon to furnish most of the necessary calories. The fat may be administered in the form of cream, olive oil or butter; the sugar in the form of pure cane sugar, syrups, preserves or candy. Such a concentrated diet cannot, of course, be adhered to for any prolonged period, because of the lack of bulk and its tendency to cause gastrointestinal disturbances. This is easily remedied by adding the fresh fruits and vegetables, especially canteloupe, oranges, grapefruit, lemons, potatoes, lettuce and celery. In the very severe cases, where extreme measures must be temporarily adopted, nothing so well fulfills the dietary requirements as lemonade. An eight-ounce glass of lemonade, containing one lemon and an ounce to an ounce and a half of sugar, given six times daily, will supply about a thousand calories, as well as leave an alkaline residue which materially aids in counteracting an acidosis.

With the foregoing facts in mind the physician is prepared to prescribe a diet that will best suit every type of nephritis in every stage. First determining by clinical and laboratory evidence how much functional impairment there is, and what waste products are affected, the diet is outlined in such a way as to reduce to a minimum those particular waste products, thereby relieving the strain upon the damaged secreting mechanism of the kidney, and forestalling the dangers of retention. If the nitrogen function is affected, the protein intake is reduced to about fifty grams. If the acids are being excreted with difficulty, meats and cereals are prohibited, and the fresh vegetables and fruits are given freely. If salt is being retained it is eliminated correspondingly from the diet, and if water is excreted with difficulty it is restricted. The bulk of the necessary calories are to be supplied by fat and sugar in any palatable form. Needless to say, all kidney irritants, such as pepper and spices, are to be prohibited.

Based on such principles, the proper diet for any case of nephritis can be so arranged as to be liberal, appetizing and highly nourishing.

DISCUSSION

Dr. Edward Weiss (Philadelphia, Pa.): The subject has been covered so well by Dr. Snowden that it is difficult for me to do more than emphasize some of the points he has mentioned.

The patient with nephritis who has marked nitrogen retention may show little or even no albuminuria and may exhibit no tendency toward edema or salt retention. On the other hand, the patient with marked albuminuria with edema and with inability to eliminate any but the smallest quantity of sodium chlorid in the urine, may show no increase of nonprotein nitrogen in the blood.

Again, a nephritic with marked nitrogen retention may show little rise of blood pressure and, more commonly, the patient with marked hypertension may have no nitrogen retention. It is evident, therefore, that an increase in the nonprotein nitrogen in the blood is not definitely related to the amount of albumin in the urine, to the increase of edema, or to the height of blood pressure. Furthermore, there may occur a retention of acid products giving rise to the symptoms of acidosis disproportionate to the degrees of nitrogen retention. In other words, the point I am trying to make is, that in nephritis the different functions of the kidney may be impaired to different degrees, and this serves as the basis for dietary regulation. Thus, to withhold protein in the form of meat and eggs, from the patient who shows no signs of nitrogen retention, is to sap his energies, retard his progress, and do him far more harm than good. Just so, to withhold salt from the patient who shows no tendency toward salt or water retention (no signs of edema), is unjustly to deprive him of a palatable diet. Greatly to restrict the fluids of one patient is just as wrong as to attempt to "flush" the kidneys of another.

One further fact is important. In the regulation of the diet we must bear in mind the acid-base equilibrium of the body, and so choose our foods as to rest the kidneys if they are deficient in their acid-excreting function, or to permit the acid-producing foods, such as bread, eggs and meats, if the kidneys are efficient in that respect. Thus it is seen that in the dietary regulation of nephritis, though we need not weigh out the diet as carefully as we do in diabetes, we have need to be just as careful in the selection of the various foodstuffs.

DR. GEORGE A. CLARK (Scranton, Pa.): Dr. Snowden's paper has been of great interest because of the tremendous impetus that has been aroused through the recent studies of blood chemistry in the better understanding of nephritis, and he has shown very well the application of this knowledge in a rational method of treating the nephritic cases. I was particularly glad that Dr. Snowden emphasized the importance in differentiating certain foods that are of alkaline or acid ash. It bears out the interesting paper that was published a month or so ago in the *Journal of the American Medical Association* by investigators from California, Dr. Sansum and Dr. Smith. In a series of ten or fifteen hyptertension cases they showed that the urine in those cases was excessively acid, sometimes being one thousand times more acid than the blood, and that by giving the diet in which there was an alkaline ash a number of these patients showed remarkable improvement in their blood pressure.

The important problem to the physician seems to be the ambulatory patients with a moderate amount of kidney involvement, the problem of placing them upon an adequate diet with which they can carry on their activities and yet lessen, as far as possible, the strain on the kidneys. After a considerable search through the literature I happened upon the diet that appears in Oxford Medicine, the diet of Dr. Christian and I think of Dr. O'Hare, that they have used in the out-patient department of the Massachusetts General Hospital. This list gives foods that are equal in the amount of protein which they contain so that a patient may be placed upon 30 grams, 50 grams, or 70 grams of protein a day and yet have a large variety to choose from. The Doctor also has an unrestricted list which allows the patient to round out the diet with vegetables and fruits which contain no protein.

I have enjoyed Dr. Snowden's paper very much indeed.

DR. JAMES P. O'HARE (Boston, Mass.): I have enjoyed very thoroughy the paper read by Dr. Snowden and have also been impressed with the fact that he brought out that there are four different functions to the kidney, each of which may be interfered with separately or in a combined fashion. I believe we do not think enough about that, particularly about the acid waste equilibrium, and I think we will know more about this sooner if we bear in mind the facts brought out by Dr. Snowden.

I also wish to subscribe very heartily to the fact brought out in the discussion, that we very often undertreat our patients rather than overtreat them. The patient is much better off if he gets a little too much protein than not enough.

With regard to the diet sheet mentioned by Dr. Clark, I wish to say a word. We were confronted some years ago with handling of our out-patient renal clinic and with handling the ambulatory cases. We found many cases in the out-patient department that were following absolutely the diet arranged for them in the hospital, but yet they would come in loaded up with nitrogen week after week. We would get them fixed up in the hospital but within a few weeks they would come back as badly off as before. On analyzing these cases we found that whereas they had been taking the same substances that they received in the hospital, quantities meant nothing to them. We then had to construct a diet which took into consideration the quantities.

Dr. Walsh and I published some years ago our first diet sheet and just recently one of our assistants and I put out a second edition of that, which is now in press. This is a simple arrangement for regulating the amount of protein in the diet. Incidentally, it is possible to regulate the amount of salt and the amount of water very easily. The diet sheet is so simple that our average out-patient case with limited intelligence can follow it very easily. The foodstuffs are divided into three groups. In Group I a full portion represents four grams of protein, in Group II it represents eight grams, and in Group III there is so little protein that we need not consider it at all. The patients know nothing about grams and we do not teach them anything about that, but instruct them to count as one point a full portion in Group I as two points a full portion in Group II, and so on. We tell them how much they are allowed to have for the day and they fill up what they need for bulk and calories from Group III. These are chiefly vegetables, fat and so on. In the inner sheet we have mixed dishes which count no points, one point or two points. It is simple enough and approximate enough for out-patient service and, as a matter of fact, we are using it for our house patients in the Peter Bent Brigham Hospital at present.

SELECTIONS

THE RESPONSIBILITIES OF THE SURGEON*

JOHN B. DEAVER, M.D.

PHILADELPHIA, PA.

This occasion is a very significant one to us all. It marks the founding of a great institution, in a great city. We have come together to pay homage and to do honor to those whose foresight and untiring zeal made this refuge for the sick possible. You have conferred upon me the high honor of offering in your name and in my own, a tribute to their memory. I do so here with deep reverence and appreciation of what we of to-day owe to their labor and their devotion to our calling. In this spirit also I should like to see the work of their hands established, and I believe that we can be of service by being ever mindful of our debt to the past and our duty to the present. With this in view I should like to speak to you of the responsibilities of the surgeon.

It has been said by many physicians that the difference between the surgeon and the internist is that the one works with his hands while the other works with his brains; which in simple parlance means the surgeon is the carpenter and the internist the engineer. I wish, to-day, to develop this theme, to analyze it and to present to you the ideals and the responsibilities of my craft. I would ask you to be patient while I pass hurriedly in review some of the main features in the progress of surgery.

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*Read at the West Penn Hospital, Pittsburgh, Pa., October 5, 1923.

Surgery is as old as man himself. Those of us who are fundamentalists must admit that the first recorded operation was the removal of a rib from our common ancester, Father Adam. For those of you who are skeptical I can present evidence that the earliest skulls found by archeologists show that the operation of trephining was understood and practiced. Surgery, therefore, is as old as any of the arts.

Hippocrates was the first to understand and appreciate fully the responsibilities of the practice of surgery. When he is spoken of as the Father of Medicine it would not be amiss to add of Surgery also, for he well realized the powerful influence which surgery must exert upon the practice of medicine. The works of the physician had no praise from him for he did not practice a divorcement of hands from brain. Indeed, in the light of modern discernment he was the ideal surgeon, a student, an observer, a deductor, a judge and a careful and experienced practitioner.

Throughout the centuries which followed we find in the records of Celsus, of Galen, Avicenna and many others, a growing prejudice against surgery as a profession, even medicine itself being scorned by the patricians. Certain of the European countries forbade anatomical dissections or made the life of the seeker after this knowledge so difficult that progress was extremely slow. In France during the sixteenth century anatomy was demonstrated by the barbers, and this in the most superficial manner.

During the medieval period surgery was divorced from medicine and the priesthood, and had gradually become a craft for the itinerant barber. Gradually an art as old and as fruitful as any of the arts had become besmirched and submerged with the invasion of medieval mysticism and ignorance. Such is the history of civilization. Viewed from afar, a panorama of what has gone before would show such peaks and valleys in every art.

But from these scorned and despised barber surgeons there gradually emerged the beginnings of the surgery of to-day. It would be amiss if I failed to recall that Ambrose Paré, one of the master surgeons of all times, was a barber's apprentice.

Gradually through the unceasing efforts of Paré and Wiseman, of Morgagni and Hunter, there developed an art based not on empiricism but upon sound knowledge. Anatomy and pathology now were a part of the surgeon's craft. The practice of surgery was no longer in the hands of the ignorant, but of the intelligent. It was no longer despised, but became a province of authority. Surgery had emerged from a despised trade to a profession, from a craft to a science.

It remained for the twentieth century to see the three great evils which still retarded and embittered surgical practice conquered. Pain, hemorrhage and infection were robbed of their terrors in the brief span between 1842 when Crawford Long, a former student of the University of Pennsylvania, first performed a surgical operation under ether anesthesia, to 1867 when Lister published the results of his experiments based on the researches of Pasteur.

A new era had dawned, and in the succeeding half century the promising bud of many centuries had developed to well nigh full bloom. During this time anatomy, physiology, chemistry and pathology were correlated, each taking its proper place in the surgeon's armamentarium, and with the passing years came new and added responsibilities. When we compare the many surgical procedures of to-day with those of the sixteenth century we cannot but be amazed. Paré declared that the duty of the surgeon was: 1. To take away that which was superfluous, as in amputations. 2. To restore to their places such things as are displaced, as in hernia. 3. To separate those things which are joined together, as in parts rendered adherent by burns. 4. To join parts which are separated, as in stitching up a wound. 5. To supply the defects of nature, as in setting an eye, an ear, a nose or one or more teeth; filling up the hollowness of a defective palate with a gold or silver plate.

There is little doubt, then, that new responsibilities have and do weigh heavily upon us. As a result of Lister's researches we realized responsibility and opportunity to extend the field of our endeavors. Before this, even the cleverest surgeon dared not intrude in regions where intrusion meant almost certain death. And so with increasing responsibility surgical mortality has been reduced and the forbidden field of yesterday is in the grasp of every surgeon to-day.

I never boast of the present status of surgery without reminding myself of the blind boast of Baron Boyer in the eighteenth century, before anesthesia and asepsis were known, that "surgery had then reached almost, if not actually, the highest degree of perfection of which it was capable." However, we no longer fear to approach the hidden areas in the abdomen; the brain is explored, and parts of it removed with comparative safety; even the heart is now repaired when wounded, and I predict that in the not far distant future the valves of the heart will be subjected to the knife. Experiments along these lines have been made. Operations are successfully performed to-day which a generation ago would have been nothing short of miracles. In the light of these advances in making accessible for curative and corrective surgery the most vital organs of the body, we can look forward to a time when no part of the human mechanism will be out of reach of the skillful operator. The reflection on this progress and the hope of even greater achievement in the future are the rewards for the labors and trials of the surgeon to-day.

As the result of an enlarged field of work we are able to view living pathology. We are able to assist the internist in correlating inaugural symptoms with inaugural lesions. No longer is there any reason for the internist to learn terminal pathology in the autopsy room, when by standing at the elbow of the surgeon he can correlate the confusing symptomatology of a beginning lesion with the pathological picture it produces. Here is a field for our brother, the medical practitioner. Let him send us the cases of leucoplakia, of ulcer and of lacerated cervices before they are carcinomatous. Let him send us the cases of chronic cholecystitis before an extensive hepatitis and pancreatitis have rendered complete cure well nigh impossible. Call us in before the inflammation of the appendix has extended beyond its serous coat and has subjected the patient to the all too frequent danger and results of peritonitis. These are your responsibilities. They will be ours if we fail to accept them once given the opportunity.

The progress in internal medicine in the last quarter century as the result of surgical advances has been considerable. What did a former generation know of gall-bladder disease, of ulcer, of appendicitis? The typhlitis of yesterday is a thing of the past. But Utopia has not yet been reached. The responsibility of safe relief by surgical means is great, but it can be shared and should be shared if cases are sent to us which are not yet beyond all hope of recovery.

We do not claim to be infallible. Our mistakes are many. By bitter experience I have learned the truth of D. Hayes Agnew's favorite statement that a surgeon's failures filled one and often more graveyards. Our's is not a life full of joys. Responsibility weighs heavily upon us and our trials and tribulations balance the scales. Our community obligations are great. Day and night problems and responsibilities demand our time and attention. We know not when we can call our time our own. The needs of our patients outweigh all other considerations. We are constantly straining our efforts to maintain orderliness in our service.

And with all this we are constantly hampered by individuals, societies and organizations who feel it a duty to bring about legislation to restrict our actions and conduct. These so-called "reformers" besiege legislative bodies to pass so-called "reform measures." They claim that our opposition is due to selfish and sordid motives. Our animal experimentation which has made clear much of the darkness surrounding infection, shock and other surgical problems of vital importance, is to them an activity in which surgeons take a perverted pleasure. Daily our metropolitan newspapers recite instances of bequests to the "starry cross" of the American Antivivisection Society. Would that this money were left to institutions for experimental research, so that human lives might be saved for this earth instead of going prematurely to a starry heaven! They do not realize that Dr. Pound of Cure Lane is becoming Dr. Ounce of Prevention Street. And this has been brought about by experimentation which goes hand in hand with vivisection. If we could work, unhampered by cults and isms, the coming century would see the world a place where there would be a constantly lessening need for us. Let none of these opponents forget that the medical profession is the one profession whose object it is to destroy its own life by eradicating the need for itself. The future will see hygienists and public health workers preventing many conditions which cause disease to-day. Your own great city should convince you of this, for who labored harder to wipe out that former scourge of typhoid fever than these very medical men, many of whom were able to rear their families on the livelihood made in treating its victims. Pittsburgh can point with pride to the results of prevention in this field.

In the hospitals we are surrounded with cares and burdens. The nurse anesthetist is more and more succeeding the medical anesthetist. But upon whom does the final responsibility rest—but upon the surgeon? Morally the former are responsible, but legally the law recognizes no one but the doctor. The law should make necessary an adequate education in physiology and pharmacology for these women. It should be a requirement and they should be licensed just as we are. We should not be shackled with a responsibility which we would not be bound to if a medical anesthetist were employed.

Upon the surgeon falls one of the most arduous, and yet one of the most agreeable of all tasks, that of training his successor. After his theoretical training comes an apprenticeship and the young student, in order to become a master surgeon must get his hand in the work, must assist one more experienced and must learn by doing. The responsibility for the next generation of surgeons is upon every one of us, and what is more arduous than watching someone perform a task slowly and haltingly that you yourself could do in half the time and with greater precision? But this is a great necessity so that the torch may burn brighter with each succeeding generation.

It is to the surgeon that we owe our modern hospital organization. It is essential that every hospital service review itself periodically and systematically so as to obtain a knowledge of its strength and its weakness, its successes and its failures. To whom does the medical profession owe more for the furthering of this program than the American College of Surgeons? Through its efforts staff energy and staff carelessness can be analyzed. The careful scrutiny afforded by successful standardization results in increased enthusiasm and caution. These are measures which we deem essential for a successful realization of our hopes for the future.

The most important person in the surgical drama is the patient, and to the patient the responsibility of the surgeon is greatest. It begins when he first sees the patient, continues through the making of the diagnosis, the decision to operate, the technique of the operation, the after-care to normal convalescence, and the advice as to the future mode of living. Let me elaborate upon these themes; first, as to the diagnosis. This responsibility belongs to the surgeon who, if he loves his work, will not shift it but will conscientiously endeavor to discover what is wrong with the patient. This is one of the greatest pleasures I derive from my work, and it is here that I wish to express my opinion that the American system of having the hospital interns rotate their services is the only correct one. We must unqualifiedly admit that the older surgeons have a better grasp of the situation than the surgeons who have had nothing but specialized training in surgery alone. The surgeon should first be a doctor and then a surgeon. He should have had experience in treating and diagnosing medical ailments of all kinds before his hand grasps the aseptic scalpel. Murphy, one of our greatest surgeons, practiced medicine in the slums of Chicago for ten years before he lifted aloft the sacred torch of surgery. It is as necessary for the surgeon to have a trained ear as it is for the internist. He should be able to detect pathological changes in the lungs, friction sounds, heart murmurs and so on. This lack of general diagnostic ability is one of the factors which makes for distinct weakness in many of those practicing the minor surgical specialties. The great surgeons of the past were doctors; the surgeons of the future should be doctors, too, if we are to have practical as well as scientific members of our guild. These are responsibilities which should not be shirked. These are responsibilities of the young man who looks forward to becoming a master surgeon. This I try to impress upon my house staff and some of my most pleasant hours are spent with them as well as with the nurses in the hospital wards and in the operating theatre. This is a pleasure I look forward to from day to day and I am sure I am not alone in this. This intimate touch with coworkers is an inspiration without which no surgeon can succeed in his work. The only disadvantage that results from this in the Lankenau Hospital is that all of the interns, when they have completed their term of service, are so imbued with the certainty that surgery alone offers them the best opportunities for the future expression of their abilities, that they all want to practice surgery. I am certain our hospital is not alone in this sentiment, and it may help to account for some of the dearth of doctors we are constantly reading about in the journals.

Furthermore, I know of no one who has a better chance of becoming a great diagnostician than the surgeon if he takes advantage of his many opportunities for studying cases and interpreting the pictures which he sees daily as he opens the hidden mysteries to the light of day and reveals the living pathology. This correlation of diagnosis with what is found is as essential in the development of diagnostic ability as it is essential to jump into the water to learn to swim. This combination of operative findings with clinical symptoms impresses indelible pictures on the cerebral cortex, pictures which are of the utmost importance when the surgeon is brought face to face with his two greatest enemies—disease and death.

You all know of my fondness for the term "living pathology" and my fondness for emphasizing and calling attention to the marvelous benefits to the human race which living pathology has brought about, but I must also add a word in this connection with what, for contrast, I may call dead pathology. It is highly essential that the future surgeon know the pictures as they are shown in the living pathology but it is also essential that he have a grasp of the sequence of events in any given disease complex and the correlation of one organ with another in diseased processes. Thus, for instance, he should be able mentally to picture the degenerative changes which are occurring in parenchymatous organs as a result of acute suppurative appendicitis. This can be done only by rigid attendance and interest at autopsies.

The subject of the necessity of obtaining more autopsies if we would develop our diagnostic skill to its greatest extent is one upon which I could spend considerable time, but let it suffice merely to mention the fact that we need more autopsies.

The second responsibility which I mentioned was the decision to operate, and in making this decision many things are to be considered. We must not only operate, but we must operate at the right time. In making the diagnosis I am constrained to consider most important a carefully taken history and a careful physical examination. The latter means not only the use of all of our special senses, but the aid of the laboratory as well. Our laboratory colleagues help us in deciding whether, as well as when to operate. They tell us of the functional ability of the kidneys, for example, and this is important knowledge in the decision whether to operate and when. If we needs must operate in spite of poor kidneys, it is this knowledge that helps us to decide the type of anesthetic to use and indicates certain special precautions in the after-care.

Let me mention some particular circumstances in which the time to operate is of functional importance. When circumscribed peritonitis is present, where the lesion can be localized, it is the time to operate. When there is a diffused peritonitis with the patient not seriously ill constitutionally, it is the time to operate if the site of the lesion can be localized. When there is a diffuse peritonitis and the lesion cannot be localized or when the patient is constitutionally seriously ill, it is no time to operate, and delay should be practiced until the lesion can be localized. The best operative technique is that which offers the peritoneum the greatest protection against the spread of infection. The most gentle handling of the patient and the use of moist pads properly placed, will accomplish this if the patient is thoroughly relaxed. The most satisfactory anesthetic for this purpose, particularly when the lower abdomen is involved, is novocain given intraspinally. Unfortunately anesthesia by this means cannot be obtained in all cases. The reason is unknown to me unless it is in the individual's own peculiar make-up. When this anesthetic fails, I use chloroform or ether followed by nitrous oxid and oxygen after the intraperitoneal part of the operation is completed. I am always a trifle concerned in using ether because of the greater likelihood of a postoperative pneumonia which does not always yield to treatment. During the operation the laboratory is again useful. There, is made the frozen section with its quick report; smears and cultures are taken, telling me at once the kind of bug, if one is present. Were I to be divorced from our laboratory, my usefulness, if I possess such to my patients, would be seriously handicapped. In the prognosis, the laboratory supplies us with the details of the pathologic anatomy of the tissues removed. It tells us of the tumors and their kind, the type of infection and its probable virulence. Our laboratory colleagues are always ready in the after-treatment when their services are needed for making smears and cultures of sore throats, for example, blood cultures, vaccines, etc. It is needless to remind you that our hope of much greater success in operating on diabetics depends upon the laboratory findings to guide us in our use of that most potent weapon, insulin.

Is there anyone here who doubts that the big advances in our medical knowledge in the future will come from the laboratory? It is here by patient, persistent, painstaking efforts that the truth is unearthed, that the chaff is separated from the wheat, that new ideas are tested, that new therapeutic procedures are passed through the flame of criticism and search. This word laboratory is being more or less abused. I have no time for a laboratory in which routine tests are carried out in a routine, mechanical manner, simply because a specimen is sent over with a blank attached asking for such and such an analysis. A real laboratory in my opinion is one in which brains are mixed with the reagents in the test tubes; it is one in which the personnel are not mere automatons who measure out quantities of chemicals and mix them in flasks or beakers, but are individuals who are grounded in the fundamentals of their subjects and who are directed by a head whose interest lies with the interest of all of us in the medical profession in aiding sick people to recover their health. I call upon our laboratory forces for opinions as to the diagnosis in many cases; I ask their opinion of the operative risk; I want their views on the prognosis both immediately after operation and later; above all I obtain their suggestions on the application of their knowledge of physiology, chemistry and pathology in the care of my patients. I get their help in interpreting, as far as possible, cause and effect. Thus, you see the laboratory colleague is an important part of a surgical team. Furthermore, as I have said before, we expect most of our new truths to come through the laboratory, indeed when any of us have an idea, it is to the laboratory that we hasten to test its worth, and the minute such a procedure is carried out, no matter where the place, it becomes a laboratory.

Responsibility does not end with a successful operation or a successful recovery. What profits it the patient if the operation is successful and the patient dies? Neither is he profited if the operation is a success but the convalescence shows that he is not restored to perfect health.

It is my opinion that the after-treatment of the operative patient should not be left to the internist. When medical complications arise, consultations may be in order but the surgeon should be the one to conduct the case to normal convalescence. This is another one of the greatest pleasures which I derive from my work. The incentive to get the patient well is a joy.

Finally, there is the matter of the future mode of living of the patient. Too often do we have patients come to us with long histories of indigestion, pain and general abdominal discomfort, particularly related to their food. We operate on such patients and remove a diseased gallbladder or a gastric ulcer or duodenal ulcer and get them well and able to leave the hospital. Many such patients have not had a square meal in years, or if they had risked one, would be sure to pay for it in pain and discomfort afterwards. With their pathological tissue in formalin and after recovering from a good operation, they feel well and are actually able to enjoy the fruits of the table such as they have not had for years. They often overeat or choose harmful food, and thus the best efforts of the surgeon are wholly or partly defeated. I believe it is the responsibility of the surgeon to enter into this phase of the matter with each particular patient. In consultation with the family physician such patients can be placed upon what is usually a very liberal régime and thus the fruit of our best planned, best managed operative procedures may be made to yield a rich harvest—that of perfect health and long life.

Mortality figures have given way in importance to morbidity statistics. The question today to be answered is not, did the patient survive, but is the patient well? The affirmative answer depends in part on the surgery done but largely also upon the early diagnosis and reference by the internist and general practitioner. The responsibility rests upon us to follow these cases after they leave the hospital, to see that they are well, three, six or twelve months after discharge. And if the procedure has not been reconstructive, if the patient is still invalided we must search ourselves in the inquiry as to the cause of the failure. It is a responsibility, a duty and a privilege to use the abilities given us to bring about a happy consummation of the appointed task. Our profession has never failed in accepting its task although we do sometimes fail in the consummation of it. And when failure seems to face us we should not hide within ourselves. Let us give our friend, the internist, an opportunity to assist us, for coöperation means success. Surgeons have not been found wanting in the past, and I hope will not be found wanting now that the scope of medicine and surgery has become so enlarged. Let us all put our minds to the task and work shoulder to shoulder for the common good of all concerned.

Thus can we repay the trust which public benefactors place in us when they endow and build institutions such as this. The great deeds of surgery have been the result of zealous enthusiasm. While not all of us attain the same eminence in our profession, the honors are shared by all, for it is, as Paré has said, "beautiful and best of all things to work for the relief and cure of the suffering." There is ample work and responsibility for all and joy for all the tribulations we encounter, for—

"Little do you know your own blessedness, for to travel hopefully is a better thing than to arrive, and the true success is to labor."

It is a joy to know that working hand in hand with our colleagues we can add to the sum total of human knowledge. Let us not fold our arms and be satisfied. Rather let us send out a challenge for new problems and new trusts. Thus can we maintain the honor, trust and dignity of our profession.

PITTSBURGH ACADEMY OF MEDICINE

ABSTRACTS

PULMONARY EMBOLISM AND INFARCTION

T. T. SHEPPARD, M.D.

This study was undertaken with several points in view: first to find if the condition obtains much more frequently than the diagnosis is made clinically; second, to find in what condition pulmonary embolism and infarction were found as complicating factors; third, to call attention to the fact that the recognition of this complication is extremely important because, if the pathology is not recognized and understood, the fundamental factor continuing to operate, there may be a recurrence of the condition which, if not already so, may prove fatal.

In one of the large general hospitals, over a period of 13 years, the diagnosis was made clinically 14 times, of which number 10 died, and the diagnosis was verified in the only four autopsies which were permitted. In this hospital during these 13 years, there were 59,267 admissions, making the clinical diagnosis a negligible percentage of the cases taken into the hospital. In another active general hospital the diagnosis was made clinically 18 times over a period of 23 years.

The diagnosis pathologically is more frequent. Cleland and Barlow report that 2.5% of the autopsies performed at the Adelaide Hospital over a period of 20 months showed this condition. The protocols of 13,000 autopsies studied by Rupp showed pulmonary embolism or infarction in 657 cases, being a little over 5% of the total.

Wilson, in the collected papers of the Mayo Clinic states that of the fatal postoperative emboli, the source of embolism can be definitely determined as venous thrombosis in about 80% of cases, cardiac thrombosis in about 10%, while 10% cannot be definitely determined. Of the 657 cases of pulmonary embolus and infarction mentioned above, 601 died after internal diseases and 56 after operation. Only where the individual was suffering definitely from a primary condition, was this clearly pointed out. However, of the 601 cadavers showing thromboemboli of the pulmonary circulation, by far the great majority showed chronic nephritis as a striking lesion, with generalized arteriosclerosis as the second largest group. Of the 601 cases, 248 showed heart disease, or about 48%. This group included all forms of cardiac diseases and does not necessarily mean that the source of embolism was cardiac thrombosis. All forms of pulmonary disease, exclusive of pulmonary tuberculosis, formed the fourth largest group of cases, with pulmonary tuberculosis making up the fifth group. It is quite noteworthy to find that the next largest group of cases is that made up of neoplastic diseases. From this point on, the cases cover a wide field of internal medicine, almost all types of diseases having one or more representatives. It is worth mentioning a small group of cases recorded due to injection of mercury in different forms, the injections for the most part being intramuscular. Fat emboli are also noted as coming from various sites of traumatized fatty tissue.

The source from which emboli come are found to be either in the right side of the heart or in the veins of the body. Pulmonary infarcts are more commonly met with in the lower than the upper lobes, the ratio being about 4 to 1, the right lung being more frequently involved than the left. They are conical or wedge-shaped, the base being formed by the visceral pleuræ. The affected area generally projects slightly above the surface, the visceral pleura generally being covered with a fibrinous deposit, which may or may not be limited to the area involved. The extent of the infarction depends on the size of the vessel which has been occluded; it may correspond to the area of one or two lobules or it may involve nearly a whole lobe. On section the wedge-shaped infarct may be distinguished by the black-red color and the fragile condition of the blood-soaked tissue. Pulmonary infarcts may be entirely absorbed, but as a rule resolution is not complete and scarring results. If the embolus is from a septic source, abscess formation usually follows, providing the embolus does not result in a prompt fatality. Gangrene may also occur.

Clinically, Connor states, pulmonary emboli and infarction constitutes the most frequent and important form of embolus. The cases, speaking generally, fall into two fairly well defined groups. In one, the embolus is large, the attack sudden and dramatic and usually fatal. In the other group, the embolus is small, the symptoms usually mild and the danger of immediate death not great.

The first type of cases has been well recognized and the diagnosis usually made. In a very sudden fashion, and usually with no warning, alarming symptoms appear pointing to thoracic oppression, faintness, dyspnea, pallor or cyanosis, dilation of the pupils, cold sweat, feeble heart action, and weak, thready pulse, with death closing the picture in a few moments or hours at the most. In these individuals there is very little cough, expectoration or pain and examination of the chest is not very enlightening. At times, a systolic murmur or a systolic and diastolic murmur can be made out at the base of the heart, and a systolic slap has been described and explained by the blood stream striking the obstructing embolus.

The second type of case is not so striking nor the immediate results so tragic. They are probably much more numerous than the first type, but have apparently received less attention and usually pass for cases of localized bronchitis, pleurisy, mild pneumonia or tuberculosis. The onset is sudden and by far the commonest symptom is pain of the pleuritic type, which may be referred to the axilla, back, shoulder or upper part of the abdomen. The next symptom in frequency is cough, which may be paroxysmal or steady and usually is productive of some sputum. All cases, however, do not cough. Bloody sputum is one of the very common findings, which, however, is not always present, but when seen, is very characteristic. The blood may show promptly, or it may not be brought up for a period of hours, and when seen first is usually bright red, at times being brought up in clots or there may be small streaks of bright blood mixed with sputum. After a day or so this sputum takes on a brownish or prune juice appearance.

There is usually a rise in temperature of a few degrees following the onset of the condition, which reaches its peak in about twenty-four hours and gradually subsides, unless secondary infection takes place. A chill may or may not accompany the rise in fever.

In this group, the physical signs depend on the size of the involved area. Unless a large part of the lung is involved, inspection will reveal nothing. If that occurs, expansion on the affected side is restricted. Palpation may reveal vocal fremitus increased, providing the area is large enough to palpate. Percussion findings also depend on the size of the infarct and whether it is superficially located. If large enough to have signs, there will be an area which does not extend from day to day and which persists for only a few days. If the infarction is large, percussion may suggest a pleural effusion, but exploratory puncture usually does not find it present. On auscultation, localized absent or depressed breath sounds are found at first, following which, fine crackling râles or a friction rub may be heard over the affected area.

Concerning the treatment little need be said. The greatest emphasis should be laid on the recognition of the true nature of the condition and, realizing that such attacks may be multiple, care should be taken to search for the origin of the embolus and if possible, protect it from any unnecessary trauma. Other than that, treatment is purely symptomatic, with opiates, mechanical immobilization where applicable, cardiac stimulants when necessary, and the utmost care should be used to maintain absolute quiet in hope of avoiding further embolic attacks.

THE NEGATIVE TONSIL

WATSON MARSHALL, M.D.

In reading the detailed reports of medical and of surgical cases—cases presumably due to focal infection—one encounters with great frequency the statement that the faucial tonsils were negative and the question naturally arises, "what is a negative tonsil and how may one be assured that in any given case, the tonsils are not the etiological factor sought for?"

In general, in forming an opinion, two categories of data are available—the examination of the tonsils and adjacent tissues, and secondly, the history. If the anterior pillar, however, is retracted and at the same time pressure exerted backward and toward the midline, pathological conditions may be evidenced which otherwise would escape observation. In chronic tonsillitis there is as a rule that telltale deep injection of the free border of the pillar—a finding that is almost pathognomonic.

There are some items in a patient's history which make the probability of tonsillar focal infection practically a certainty, and this regardless of what the physical findings may or may not be.

The class of "negative tonsil" is characterized, first, by an oropharynx, including the faucial tonsils, which on examination fails to arouse even a suspicion that any pathological process is present; the pillars are not injected; the tonsils are quite normal in appearance and reveal nothing unusual on pressure; the glands of the neck are not palpable, etc., etc. The history of the throat is gone into and we find nothing that would focus attention on the tonsils. Probably all that we can elicit from the patient or from the parents is that there may have been one or two very mild attacks of sore throat.

We are constrained to conclude under such circumstances that the tonsils are negative as foci of chronic infection. Our contention is that it is absolutely impossible to brand tonsils as negative, without fear of error and in spite of the most painstaking examination and in spite of the most careful scrutiny of the patient's history.

In support of this contention two cases are reported:

W. W. W., age 20 years, complained that for several years, as nearly as he can recall, he has felt below par, lanquid and "good-for-nothing." He had practically all of the children's diseases except scarlet fever; pneumonia "three times before he was three years old." Never had diphtheria, quinsy or definite tonsillitis that either he or his parents could recall. For an indefinite time there had been a mild daily rise of temperature. General physical examination threw no light on the problem. His teeth and the sinuses were excluded in so far as it was possible to exclude them. His weight on October 19, 1914, was 137 lbs. The examination of the throat inclined us to place his tonsils in the negative class. However, a tonsillectomy was done and to our great surprise, one of the tonsils on section showed a number of definite tubercles scattered throughout its extent. It would seem that any process as extensive as this proved to be must show its hand locally, but such was not the case. This young man began to improve at once. In less than three months he had gained seven pounds, with no change from his previous method of living, and to-day he is robust and apparently in perfect health. The other tonsil in this case was not tubercular and the adenoids likewise free.

The second case was seen with Drs. Emmerling and Schleiter and to them must go the entire credit for the remarkable results obtained, inasmuch as we operated really under protest. The patient was in desperate condition and there was grave doubt that we were attacking the real focus. This little girl, H. W., age 11 years, had been confined to bed for several months with endocarditis, myocarditis and mild arthritis. Her weight was 55 pounds. R. B. C. 3,640,000, W. B. C. 14,600, hemoglobin 51%. X-ray of chest showed enlarged heart—no involvement of glands, but "there was a fine infiltration in the form of fine mottling, spreading from the hilus along the mediastinum, suggesting tuberculosis." Thanks to the skill of Dr. McCurdy in administering the anesthetic, the child went through her operation nicely and made an uninterrupted and uneventful recovery. The report from the laboratory was most disappointing, in the light of the child's subsequent improvement. Mild chronic lacunar tonsillitis seemed hardly sufficient to have brought about the pathological condition of her heart, but such was evidently the case, for in the course of a week or ten days she was able to be up in a chair in her room. After three weeks she could walk about, and in a couple of months was leading the sort of a life common to children of her age and to-day is able to swim, dance and play tennis. One year from operation her blood picture was practically normal. The tonsils were small, well covered by pillars, the latter showing no injection. There was no pus demonstrable before, during or after removal. In appearance they were as "negative" as any tonsils could be. Her throat history was also negative except for a not very severe attack of tonsillitis several years previous. Nothing else could be found in the way of a focus of infection and her physicians wisely insisted that the tonsils be removed, stating that in their opinion the case would end fatally if the operation were not performed.

To attempt to answer our original question—"What is a negative tonsil?"

It is one that has no etiological bearing on the case in hand. How may one recognize a negative tonsil? In the majority of instances of chronic tonsillitis, the examination alone will reveal pathological conditions. In a smaller number the history alone will suffice. In a still smaller group, neither history nor examination is convincing and in these cases I think we are warranted in this position, namely, that our case is one ordinarily associated with and caused by focal infection, and as all other usual foci have been eliminated with care, one is justified in doing a tonsillectomy. This position has a sound pathological basis—numerous points of ulceration at the distal ends of the crypts may be present following undiagnosed tonsillitis and their presence unannounced by any of the usual signs of chronic tonsillitis.

EMPYEMA; WITH REPORT OF TEN CASE HISTORIES

N. P. DAVIS, M.D.

For several years difficulty has been experienced in attaining a satisfactory result in many patients suffering with empyema. Complicated conditions in the lung and pleura, shock and death within a few days after rib resection, collapse of the lung, leaving a cavity, persistent drainage for weeks or months after thoracostomy and many other difficulties have taught one to regard these conditions as grave and difficult under the most favorable circumstances.

Finally a method was sought which would do, as nearly as possible, the following: 1. Remove the fluid slowly instead of suddenly. 2. Avoid opening the pleural cavity widely to the atmospheric pressure. 3. Encourage the lung to stay dilated. 4. Encourage the heart and vessels to return gradually to their normal position. 5. Permit the closure at once of the opening in the chest wall, should the patient fail to improve, and encourage rapid closure of the chest wall as soon as the drainage has ceased. It seemed that many if not all these requirements could be realized by simple intercostal drainage at the correct level. In patients too sick to stand even this mild method, aspiration one to three times, followed with drainage when the patient has improved to a point where drainage seemed safe, was used.

A few lines in analysis of the above-mentioned points may be worth while. 1. A tube, large or small, held by a safety pin and covered by a snug dressing, will evacuate the pleura a few drops at a time and will become clogged at times. This is a distinct advantage and should be followed. 2. An opening between the ribs of an adult or even a child is quite effectively corked to outside air by the tube through which pus drains constantly. While some air does enter the pleura, still the intrapulmonary pressure can and does expel it again. 3. The lung remains dilated and avoids becoming adherent in a collapsed state. 4. Since, in the formation of fluid, the heart and vessels have been gradually pushed aside, it seems logical to believe that a sudden dropping back into their normal position might account for some of the annoying respiratory and circulatory symptoms seen when the fluid is evacuated suddenly. 5. At times, after thoracostomy patients have failed to improve, they have been helped by closing at once the opening made by rib resection. This not only cut off the source of irritation but in each instance the patient improved quite rapidly and came up again to a point where the tube could be reintroduced. 6. It was not uncommon for a patient after rib resection to improve and practically stop draining pus, but at this point the lung remained collapsed and the cavity was present. By the time the opening had closed the lung was hopelessly bound down. In a few days or weeks pus had again formed and the sinus opened spontaneously or was incised. These cavities are later obliterated with the greatest difficulty.

The difficulties encountered can be best described by relating the type of pathology met and stating how each patient responded. For description the patients fit well into three classes: 1. A general pleuritis with many ounces of thin smoky fluid pus. 2. A more or less localized accumulation where the larger part of the pleural cavity seems free and quite normal. 3. A general pleuritis of the typical pneumococcic type with great quantities of curdy pus and fibrin floating in liquid pus.

In the first type a tube placed at a dependent point between the ribs will drain freely and in two or three days the pleura will be practically empty. From this time on the tube is removed, sterilized and replaced probably three times in the next two and a half weeks; at the end of this time there is usually very little or no drainage and the patient's temperature is normal.

In the second type the pus usually shows a little firmer consistency but is much smaller in amount. After the first two days' drainage, which usually evacuates the bulk of the pus, very little discharge is seen.

In the third type, which is in the minority fortunately, the tube is prevented from draining freely by the soft curds of fibrin which block the inner orifice. In these patients two tubes are used together. After forty-eight to sixty hours the tubes are removed, the ribs separated with forceps or rib retractor until a little air enters. At this point the patient coughs and expels the bulk of the thick residue. It may be necessary to repeat this process a few times, leaving the tubes in place meanwhile. The pleura is so thick and deeply involved in these patients that they remain sick and often carry a temperature for many weeks. Time, supportive treatment and gradual evacuation eventually empty the pleura and leave the lung dilated.

PULMONARY EMBOLISM

J. M. LONG, M.D.

Mr. —, a man of 38 years, 5 ft. 8½ inches tall, of normal weight, 140 lbs., was first seen by Dr. Steel at the Allegheny General Hospital August 9, 1923. Right knee was locked. Had been in this condition for about eight days. Was operated upon at the Allegheny General Hospital in August and cartilage removed. Patient made an uneventful recovery, with the exception of complaint of pain in right groin for a day. There was no redness, swelling or rise of temperature accompanying this. He left the hospital in about two weeks and for 7 to 10 days after operation was in good condition.

He was riding in an auto August 31st, when he felt a sudden sharp pain in the left posterior chest. His breathing was somewhat difficult, and he was taken home, put on a couch for an hour and then put to bed. It was thought at the time that he had in some way wrenched his back. September 1st he was brought to town. On examination, the left chest showed a few râles at the angle of the left scapula; otherwise the physical examination was negative. The patient was coughing a little and the sputum was blood tinged. Temperature 99.8, pulse 88, respiration 44. He complained of a little pain on deep breathing. Diagnosis of a probable pulmonary infarct was made and the patient kept in bed. His bloody sputum gradually diminished, and temperature returned to normal in about 5 days. On the sixth day there was return of the symptoms above mentioned, this time on the right side with subsequent subsidence of all symptoms until, 5 days later, the same phenomena occurred this time followed by an area of definite consolidation accompanied by fever, which ranged from 100 to 103, pulse 106 to 120, respiration 30 to 60 from September 1st to September 26th. September 18th, temperature 104, pulse 140, respiration 60. Paracentesis left chest, oz. ten of straw colored fluid removed. A fourth embolus occurred on the 6th of September. On the next day the patient complained of severe abdominal pain. Examination showed a scaphoid abdomen, held rigid. Respiration hurried, expression anxious; there was nausea, and the patient vomited about a cupful of bright red blood. A tentative diagnosis of mesenteric embolus was made. Ice was applied and morphin given hypodermically, even in the face of his pneumonia. A second mesenteric embolus took place four days later with the same symptoms. These gradually disappeared in about 5 days. B. P. 100/80; R. B. C. 3,500,000; W. B. C. 12,200; Hgb. 65%; poly. 74; L. L. 4; S. L. 14; eos. 4.

On September 14th the nurse reported that the patient's upper abdomen near the ensiform seemed swollen. Examination showed the right rectus swollen to the size of a small orange, the swelling tapering off from the mass until it ended about the umbilicus. The whole area was swollen, reddened and very tender. The swelling subsided in a few days, but was followed by a recurrence in the same muscle five days later. The last blood clot was probably in the original seat of trouble—the right saphenous vein. This was accompanied by the usual signs of phlebitis.

After the chest was entirely clear, and the patient should have been well, the temperature continued to run about 99-100 every day. His teeth were x-rayed, three abscesses found, teeth removed, and the temperature came to normal, and remained so.

Frederick B. Utley, M.D., Secretary.

CASE REPORTS

TETANUS WITH RECOVERY

OSCAR E. FOX, M.D.

READING, PA.

Mrs. G. B., aged 25, called at my office, March 25, 1921, complaining of chills, stiffness in the lower jaw for two weeks, temperature of 99 3/5, and pulse 100. Patient thought the stiffness in the jaw was due to her teeth. She had badly diseased tonsils and was a distinctly neurotic type. A provisional diagnosis of la grippe was made. The next day, March 26th, the symptoms were exaggerated, with the addition of a few slight convulsions. The case was diagnosed as tetanus and the source of the infection was traced to trimming a corn two or three weeks ago.

She was admitted to St. Joseph's Hospital, March 26th, at 6:30 p. m. The same evening I administered 5,000 units of tetanus antitoxin subcutaneously, 10,000 units intravenously and 5,000 units intraspinally. In addition I ordered triple bromids and chloral by mouth and morphin hypodermically.

Following the intraspinal injection of tetanus antitoxin she developed a severe headache, high. temperature, rapid pulse, and symptoms of collapse which became alarming.

The following day, March 27th, the headache, trismus, and occasional muscular twitching were the outstanding symptoms. I administered 10,000 units intravenously, 5,000 units subcutaneously.

March 28th, the headache, trismus and muscle twitching continued, combined with an extensive and very annoying rash. The headache increased in intensity and in spite of medication consisting of triple bromids, chloral, migraine tablets and aspirin. I resorted to one c.c. of 6% magnesium sulphate solution hypodermically for a few doses, and finally at 9 p. m gave 5 c.c. of 6% magnesium sulphate solution intraspinally, after withdrawing 7 c.c. of spinal fluid. This spinal injection of magnesium sulphate seemed completely to relax the patient. The relaxation was general and accompanied by involuntary micturition and defecation. She rested well and was able to sleep during the night, which was the first real rest and sleep she had since coming to the hospital. This was the turning point of the disease and she began to show daily improvement. The bladder and anal sphincter recovered completely in a few days.

The temperature ranged from normal to 104, pulse 72 to 120, and respirations 20 to 28 while in the hospital.

232 No. Fifth Street.

PHILADELPHIA GENERAL HOSPITAL

MONTHLY CASE REPORTS

BY THE STAFF OF THE PSYCHOPATHIC DEPARTMENT

Paresis or dementia paralytica is generally regarded as incurable. Sometimes the disease spontaneously improves temporarily, to return with a progressive mental failure and a fatal termination. It is due to syphilis and if treatment is instituted and carried out before serious destruction of the brain and spinal tissues occurs there is some hope that the disease may be aborted and possibly cured. Certainly in certain cases we see enormous improvement so that the future care of what might become an institutional case can be very successfully dealt with at home.

The following case illustrates very definitely what can be done:

J. K., aged fifty-five, on admission suffered from numbness and pains in the legs associated with marked clonic contractions of the legs and inability to stand. There were double vision, confused state of the mind, depression and the characteristic difficulty in speech. The pupils were irregular, unequal and did not react to light. The tongue was tremulous. He could not touch the tip of his nose with his finger accurately, he had a general coarse tremor in arms and legs, the knee jerks were absent and he had lost the sense of position of his feet. The optic discs were atrophic. The routine physical examination showed no pronounced abnormalities. The blood and cerebrospinal fluid Wassermann was 4+. There were twenty-four cells to the cubic cm. in the spinal fluid. Globulin and sugar were positive and there was a positive Lange curve. The blood chemistry was negative. Mental condition showed pronounced memory defects, confusion and profound depression, associated with marked emotionalism. He was regarded as a case of tabetic paresis.

He was treated with spinal drainage after which was injected into the blood arsphenamin .6 mg. The blood and cerebrospinal fluid Wassermann remained positive but the Lange curve was modified under treatment. He was discharged from the hospital three months later entirely relieved of all the subjective symptoms. His speech disturbances disappeared, his depression cleared up, he lost his tremors and he was able to walk without apparent difficulty, to such an extent that he became a useful assistant around the wards. In fact he seemed to have been restored to a nearly normal mental state, certainly to about eighty per cent normal.

This illustrates the great improvement that may follow appropriate medication and treatment. Associated with the administration of the arsphenamin were baths, general massage, rest and forced feeding. In other words, a modification of the rest cure was given, an important adjunct in the management of such cases.

In cases in which there is no optic atrophy a new drug may afford much hope, namely, tryparsamid. The treatment by this drug is still in an experimental stage.

The value of any form of treatment depends upon the degree of change in the nervous tissue. If the case is an early one and the symptoms are due to pressure from exudate vigorous treatment may remove this exudate before the destruction of nerve tissue has occurred; therefore much depends upon the early recognition of beginning paresis such as character changes, judgment defects, excitable periods and periods of depression in middle-aged persons, so that such individuals may have the advantage of a possible cure or at least of great improvement by institution of the proper treatment in the early stage of the disease.

John H. W. Rhein, M.D.,
Visiting Chief, Neuropsychiatric Dept.

ORATION

ORLANDO H. PETTY, M.D.
PHILADELPHIA, PA.

DELIVERED FOR THE MEDICAL CLUB OF PHILADELPHIA, AT THE TOMB OF THE UNKNOWN SOLDIER IN WASHINGTON, D. C., MAY 15TH

We are assembled here to pay tribute to the Unknown Soldier. Yet to me it seems impossible for anyone to choose words and arrange them in sentences that would be a fitting tribute to a volunteer who has made the supreme sacrifice. All I shall attempt is to emphasize a few of the thoughts that I think our hero, the spirit of America, must have thought.

He may have volunteered from any one of millions of American homes. War mothers whose beloved sons have not been identified may well take comfort and solace in the possibility that this representative body of physicians of our great Nation bows in reverential tribute over the sacred body of her own precious boy who died for his fellow man in the service of his own country. "Greater love than this hath no man."

The tomb of the Unknown Soldier cannot be designated as a mere sepulchre. It will always be venerated as a sacred shrine; a shrine emblematic of the supreme sacrifices contributed by the nobe youth of our beloved Nation on the shell swept and gas poisoned battlefields of the Great War.

Unknown Soldier, we reverently place this wreath upon your tomb regarding you as our compass, our guiding star in the duties of citizenship. Unknown before the Great War, and I say it respectfully; unknown because during your life prior to the war you were not privileged to be subjected to the acid test that purifies the souls of real men and makes them the standards of citizenship in the civilized world. Your true worth was unknown perhaps to all save to her from whom you inherited your convictions of the superman, but surely known to her, your mother, who also taught you righteousness and thrilled you with the zeal for service to your Country and your God. Unknown because you thought not of self but only of obedience to our nation's laws and duty to mankind. Unknown only in name, for you were always known as the highest type of the world's best men who respond at once to the call of help from humanity and are ever ready to make any sacrifices, yes, willing, if need be, to answer the last muster whenever our Commander, The Great Physician, calls.

Yours was a soul that thought only of service, a soul that feared no one but God.

Our duty is plain, we must think the thoughts and live the ideals of the Unknown Soldier, thus making this world better and worth the price our fallen heroes paid for it.

THE USE OF CONVALESCENT SERUM IN THE PROPHYLAXIS OF MEASLES

In 396 cases of measles at the Durand Hospital during ten years there were eighteen deaths, or a rate of 4.5 per cent. Bronchopneumonia was the fatal complication in sixteen of these, and associated diphtheria in the other two. There was only one death among children over 5 years of age, this occurring in a boy, aged 7 years, who had a complicating neglected diphtheria. During the spring and summer of 1923, measles convalescent serum was collected for trial as a prophylactic measure. Exposed children who had not had measles were given serum. In all, sixty-three children were observed by George H. Weaver and T. T. Crooks, Chicago (*Journal A. M. A.*, Jan. 19, 1924). Of these, four had had measles and two were under 2 months old; these were not given serum and did not develop measles. There were fifty-seven susceptible children; nine of these were not given serum, and they all developed measles from twelve to fifteen days after exposure. Forty-eight were given serum; forty-four did not develop measles, although they were kept with the others and were similarly exposed. Four of those given serum developed measles. In three of these the rash appeared from one to six days after the serum injection. In one the rash came out fifteen days after the administration of the serum on the day of exposure. The main use of the serum seems to be limited to prophylaxis against measles when given within the first week of exposure. This protection is apparently a passive immunity, and its duration is limited.

AN EXPEDIENT TO CONTROL EPISTAXIS

Joseph G. Levine, New York (*Journal A. M. A.*, Jan. 19, 1924), stops this bleeding by the use of an ordinary rubber finger-cot about the size of the index finger or smaller. Its exterior is covered with a bland lubricating jelly to make the insertion and removal easy; then it is grasped with the nasal forceps and inserted into the bleeding nasal cavity, the blind pouch end foremost, as far as it will go, with the open end just protruding from the nasal orifice. A one-half inch strip of plain gauze is then packed into the rubber encasement as firmly as possible with the nasal forceps, while the finger-cot is held from sliding in. The bleeding is effectively controlled, because the gauze packing cannot become blood soaked and loosen, while the elasticity of the distended finger-cot distributes the force of pressure evenly in all directions. It is not necessary to remove this packing within twenty-four hours, because the protection afforded by the rubber finger-cot to the gauze prevents it from soaking up sapremic exudates and blood that often induce infection of the bleeding site and promote further hemorrhage. The removal of the packing is simple and not discomforting. One first removes the gauze, and then slides out the finger-cot.

Dr. O. Pine queries: If the valiant, virile orators of the county society who overwhelm with thunderous negation the opinions of differing confreres expressed in discussions could be influenced to divert a fair portion of their aggressive belligerency upon quackery, would not the latter be glad to hide its hydra-head?

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EDITORIALS

PHYSICAL EXAMINATIONS FOR PHYSICIANS

The Committee on Public Relations of the Medical Society of the State of Pennsylvania feel that the subject of physical examination of the apparently well is of sufficient importance to merit personal attention and instruction. They have therefore made provision for the examination by leading men of the state of one hundred physicians at the Reading session in October. Only doctors who believe themselves in good health should apply. After the examination these doctors are asked to make such comments, criticisms and suggestions as may be helpful in framing a standard for future large use.

This will offer to these doctors not only the opportunity to undergo a thorough inspection, with a report upon their physical condition, but it will also afford an opportunity to observe the methods adopted by those who have had experience in conducting such examinations and provide a basis for constructive discussion of the subject. It is hoped by the Committee that the physicians of the state will take an interest in this project and that a good number will apply, because the subject is being urged more and more upon the profession by the public and it behooves the members of the profession to be prepared to make such examinations for their clientele.

Those who wish to be examined should send their names at once to the Secretary of the Committee, Dr. Frederick L. Van Sickle, 230 State St., Harrisburg, Pa. Applications will be filed in the order of receipt and subsequently referred to examiners. In due time each of the first 100 applicants (it will not be feasible to examine more than 100) will receive an appointment, together with a history sheet which should be filled out and on which should be entered the usual urinalysis: to wit, specific gravity of 24-hour quantity, protein, sugar, etc.

The result of the individual examinations will be strictly confidential. Those who are examined, if it be found that they are really well, will be cheered thereby; and if conditions are discovered requiring treatment they will be so directed. If you desire to be among the first 100, do not fail to make application early.

TYPHOID FEVER

Twenty-five years ago no medical program was complete without a discussion of at least some phase of typhoid fever. Its clinical aspects, its diagnosis and its treatment were constantly uppermost in the minds of medical men. This was not without reason. for at that time this disease was decidedly prevalent and its proper care was of prime importance to any doctor who expected to retain the confidence and respect of his community.

The "typhoid casualties" of the Spanish-American War were fresh in the minds of our citizens. The larger centers of population were so ridden with the disease that the constant cry was for prevention and abatement. Millions of dollars were spent for clean water supplies. Hospitals maintained special wards for its care and these were always crowded. The "young doctor" could always be sure of a case or two to treat and in that way maintain the family exchequer.

Then, through education and sanitation, the number of cases began to decline, until during the past decade, particularly among the younger medical men, typhoid became almost an unknown quantity. Vaccination and sanitation had apparently won the battle. During the World War it was so rare that it excited comment only on that score.

Now for some unknown reason, like John Barleycorn, it has decided to come back. Not in the larger cities, as previously, but in the country districts. An occasional case trickles into the hospital ward. The younger nurses do not know what typhoid precautions mean. The younger doctors have never seen it and the diagnosis is often rather more fanciful than accurate.

"Prevention" and "preparedness" are to-day uppermost in the minds of both the laity and the profession. Carrying out this idea, a Symposium on Typhoid Fever will form an important part of the program of the Section on Medicine at the October meeting of the State Medical Society.

Clinical aspects, diagnosis, treatment, prophylaxis, sanitation; in fact every possible side of this all too many-sided malady will be taken up. Such men as Dr. Thomas R. Boggs of Baltimore, Dr. Lawrence Litchfield of Pittsburgh, and Dr. Chas. H. Miner of Harrisburg have consented to present the various subjects. Each is a leader in his particular field and what they say must of necessity be instructive and authoritative.

It has recently been an all too frequent occurrence to neglect even the probable diagnosis of this very treacherous disease until other members of the family and nurses have become infected and in several instances with fatal results. A nurse who had been taking care of a child suffering from what had been carefully diagnosed intestinal influenza became ill. She returned to her home in an adjacent city and sent for her physician, only to have her condition diagnosed as appendicitis. A surgeon was sent for, who, fortunately for the patient, had been in general practice when this disease was prevalent. A Widal was suggested. Wonders never cease; the surgeon's guess was right!

If the older men, with their years of experience, will but dig back in their memories and relate their observations, if younger men who lack the temerity to make even a provisional diagnosis of "typhoid," in a fever of obscure origin, will ask a few questions, the discussion of these papers will more than repay any man for his attendance. Should it accomplish nothing else, the old rule of treating it as "typhoid until proven otherwise" may be brought back to you. Your patients and the community will benefit by it.

Sanitation has practically eliminated this condition from our cities. Automobiles carry us from the city to the woods and crystal springs, the favorite resort and abiding place of the bacillus typhosus. We need have but little fear of epidemics; but the sporadic case is becoming so frequent that it demands our constant vigilance and thought. A symposium such as this should prove the outstanding feature of our meeting.

C. F., Jr.

COLLECTIVE BARGAINING

For quite some time past we have observed that this term is used in connection with the work of organized labor. It has seemed to us, as we viewed it from the physician's standpoint, that individual bargaining was the form best suited to our experience. In our past endeavors we have always been individualistic. We have thought that what we wished done should be accomplished by individual effort. In many instances this method has achieved the object desired and personal influence has been able to win out.

In these days of stress and strain, when changes have occurred that place the medical profession in a light far different from that which existed a decade or two ago, we must view our desires and their method of accomplishment from a different angle. It becomes a self-evident fact that we must strive collectively for our objects. Collective bargaining must be our method of bringing to the attention of other groups the things we wish changed in the management of public health, and especially the laws relating to the practice of the healing art.

The unit of society is the individual. When these individuals unite into communities and states, their combined efforts are accorded more attention than that of the single unit. So it is with our professional endeavors. While, in our practice of medicine the personal relationship is paramount, when it comes to obtaining the notice of other groups, we must array ourselves in organizations to command the best results. This we have done, at least on paper, in the formation of county and state medical societies, and later on of the national societies. However, we have yet to learn how necessary it is for each unit, the member, to exert himself in coördination with the other units of the organization in order fully to bring to bear the energy latent in each individual member.

The moral of all this is plain. No member of our county medical societies should ignore the appeals made to get together on all questions relating to the work of the organization. It is of the utmost importance that our collective influence be put forth in order to secure the proper recognition from lawmakers, if we expect to win out.

It will be only a few months when questions of moment affecting the Doctor of Medicine will be up for consideration in the Legislature. Are we prepared to stand solidly back of every plan to frame and enact laws relating to the safety of the people of the state as well as our own place in the state professionally?

"United we stand; divided we fall."

IS GENERAL PRACTICE DECLINING?

The "sob stuff" that we read about the decline of general practice and the rapid disappearance of the general practitioner emanates principally from the big cities, and in them it is true that the specialist is much more prominent than is the general man, although the latter, though quiet in his work, is very far from being extinct. Perhaps it has not occurred to most physicians that much that is printed about the family doctor going out of style is a form of insidious propaganda to boom specialism. This propaganda emanates from two sources: the first factor being the less qualified specialist who must needs exalt his prerogative; the second is the layman who wants a handy and cheap medical service for ordinary ailments. There are entirely too many crocodile tears being shed over the disappearance of the old family doctor. He has *not* disappeared; he has simply become wise to the economic situation and modernized his ways of doing things. The layman *wants* the specialist, even if his charges are a bit heavy; it is the layman that has made specialism profitable, but he wants more general men for the run of medical work for the selfish reason that he wants to save money. And many laymen now realize that they have overplayed specialism, so they are patting the general practitioner on the back and telling him what a good fellow he is.

Where the land, roads and markets are good the farmers patronize the city specialists and have all the general practitioners justified by the amount of work for them to do in their communities. But where the land, roads and markets are poor there is an acute shortage of medical practitioners. It is perfectly true that there is a trying situation as yet unmet in these districts.

The farmer has become modernized and would not be at all satisfied with the medical practitioner of past days. Furthermore, the medical men in rural districts to-day are pretty keen to the situation and most of them are up-and-doing men of real ability. The "rube" farmer is nearly extinct, and with him went a lot of rural institutions, including "Ol' Doc." This is not saying anything against the family doctor of the saddlebags era; he was a useful institution in his day. But it would be very strange, with all the modern improvements, if the country doctor remained just what he was fifty years ago.

As a matter of fact, the country doctor of to-day differs little from his city colleague. Perhaps there are more city men feeling financial stress than there are in rural and semi-rural sections. There are poverty-stricken city sections and parallel sections in the less favored country districts, and the resident physicians are hard to keep there if they can get away. Yet it does not seem fair to blame the doctor for moving. It is often a community affair to get public utilities where they would not pay without some special financial encouragement, and it is just as much a community affair to get and retain a good doctor.

The overhead expense of medical practice, like the overhead in everything else, has gone up; and the practitioner must meet it by doing a more profitable business. The way that is done these days is not merely by charging more for drugs furnished and visits made, but by doing a lot of things requiring skill and expensive appliances. Specialism has not decreased the need for the services of the general practitioner; it is just the opposite, for specialism has taught the general man to do a lot of effective things our forefathers did not do. The general practitioner of to-day is a far more technical man than his predecessors of twenty years ago were.

There is too much stress laid on specialism. Every successful doctor must specialize somewhat in emergency surgery, in obstetrics and in diseases of children; and most of them are very technically able men in these very lines. Then, too, the successful country doctor must have quite a range of laboratory appliances and know how to use them. The medical directories list about 150,000 physicians in the United States, and they list the specialists separately. Doctor, look up the directories and you will promptly conclude that the overwhelming bulk of the profession are in general practice. Yes, large numbers of these general men give *special attention* to some one line of work, but the bulk of their work is general practice.

The general practitioner has changed from what he was even ten years ago; he is an educated gentleman of technical training and ability, and he knows perfectly well that he *must* be a better trained man than was his predecessor. The young graduates do not have any "corner" on this technical ability, for the older men have kept up, just as the older contractors, engineers, mechanics and merchants have done. Go into the offices of the general practitioners to-day and note what you see there. Nothing more need be said.

Drs. Jones and Smith and Brown are so progressive these days, even if they are general practitioners, that it takes a lot of people everlastingly speeding up to keep even with them. No longer is Dr. Jones, General Practitioner if you please, worried over a lot of yellow sensationalism about how he is being gouged by the "octopus," the sanitarian and the cultists; he is too busy to worry, and he "is too proud to fight" a lot of wind-jammers, calamity howlers and faddists. He is a useful man, and he knows it; and so does everybody else. Then why worry? General practice is here to stay. T. S. B.

TRUTH ABOUT MEDICINE

NEW AND NONOFFICIAL REMEDIES

Patch's Cod Liver Oil.—Cod liver oil containing 0.5 per cent of essential oils as flavoring, and having a vitamin potency so that 0.002 Gm. per day is adequate to promote the growth of young albino rats. For discussion of the actions and uses of cod liver oil, see Useful Drugs. The dose is not more than 4 c.c. (1 fluidrachm) 3 times a day. For children not more than 2 c.c. (30 minims) 3 times a day. E. L. Patch Co., Boston.

Vitalait Culture Bacillus Acidophilus.—A pure culture of bacillus acidophilus in vials each containing about 7 c.c. It contains not less than three hundred million of viable organisms (B. acidophilus) per cubic centimeter at the time of sale. For a discussion of the actions and uses of cultures of B. acidophilus, see Lactic Acid-Producing Organisms and Preparations, *Jour. A. M. A.*, Sept. 8, 1923, p. 831. The usual dosage is the contents of one vial diluted with water and followed by a quantity of sugar of milk. The culture is distributed by the manufacturer only and is sent by mail. The Vitalait Laboratory of California, Pasadena, Cal. (*Jour. A. M. A.*, March 1, p. 717).

Apothesine.—Diethyl-amino-propyl cinnamate-hydrochloride. Apothesine is a local anesthetic of the procaine rather than the cocaine type, that is, it belongs to that type which, while effective for injection anesthesia (especially when combined with epinephrine), is relatively inefficient when applied to mucous membranes. It is rather slower in action than procaine. Its absolute toxicity is less than that of cocaine, but about twice that of procaine. It is employed for infiltration injection, nerve blocking, intraspinal injection, pressure anesthesia, oral administration as a palliative measure, for postoperative and persistent vomiting and pain of gastric ulcer. As a local anesthetic, apothesine is used in 0.5 to 2 per cent solution, generally with epinephrine and sterile water or physiological solution of sodium chloride. Apothesine is marketed in substance and also in the following forms: apothesine solution 1.5 per cent; apothesine hypodermic tablets 0.08 Gm.; apothesine and adrenalin hypodermic tablets (apothesine 0.04 Gm.; adrenalin 0.00004 Gm.); apothesine and adrenalin hypodermic tablets (apothesine 0.3 Gm.; adrenalin 0.0003 Gm.); apothesine and adrenalin hypodermic tablets cylindrical (apothesine 0.01 Gm.; adrenalin 0.000025 Gm.); apothesine ointment (apothesine 10 per cent; adrenalin 1:60,000; and menthol 0.5 per cent). Parke, Davis & Co., Detroit (*Jour. A. M. A.*, March 8, 1924, p. 793).

Butesin Picrate.—Trinormalbutylparaminobenzoatedinitrophenol.—A compound consisting of one molecule of trinitrophenol (picric acid) and three molecules of normal butyl ester of 4-aminobenzoic acid. Butesin picrate combines the anesthetic action of butesin with the antiseptic properties of trinitrophenol (picric acid). An aqueous solution of 1:1,400 produces immediate and complete anesthesia of the eye which lasts from ten to twenty minutes. Butesin picrate is used in the treatment of burns, ulcers and other denuded, painful lesions of the skin. For use, a one per cent butesin ointment is supplied by the manufacturer. The Abbott Laboratories, Chicago.

Normal Horse Serum.—A normal horse serum (see New and Nonofficial Remedies, 1923, p. 281) marketed in packages of one syringe containing 10 c.c.; also in packages of one syringe containing 20 c.c. United States Standard Products Co., Woodworth, Wis. (*Jour. A. M. A.*, March 15, 1924, p. 876).

Dibromin.—Dibromobarbituric acid.—Dibromin is an antiseptic and germicide proposed for use in solution as an irrigating fluid and wet dressings, for flushing cavities, irrigating infected wounds and for saturating gauze packings. Dibromin is claimed to be practically free from irritating or toxic properties in the concentrations required for therapeutic use. Solutions of 1:10,000 (6 grains to one gallon) or stronger are used. Dibromin is marketed in six grain capsules. Parke, Davis & Co., Detroit.

Acne Vaccine.—An acne vaccine (see New and Nonofficial Remedies, 1923, p. 302) marketed in packages of one 10 c.c. vials, each c.c. containing 40 million killed bacteria. United States Standard Products Co., Woodworth, Wis.

Gonococcus Vaccine.—A gonococcus vaccine (see New and Nonofficial Remedies, 1923, p. 304) marketed in packages of one 10 c.c. vial, each c.c. containing 1,000 million killed gonococci. United States Standard Products Co., Woodworth, Wis.

Pertussis (Whooping Cough) Vaccine.—A pertussis bacillus vaccine (see New and Nonofficial Remedies, 1923, p. 306) marketed in packages of one 10 c.c. vial, each c.c. containing 3,000 million killed pertussis bacilli. United States Standard Products Co., Woodworth, Wis.

Typhoid Vaccine.—A typhoid vaccine (see New and Nonofficial Remedies, 1923, p. 314) marketed in packages of three 1 c.c. vials, containing 500 million, 1,000 million and 1,000 million killed typhoid bacteria, respectively. United States Standard Products Co., Woodworth, Wis.

Typhoid Paratyphoid Vaccine (Combined).—A typhoid vaccine (see New and Nonofficial Remedies, 1923, p. 314) marketed in packages of three 1 c.c. vials, the first dose containing 500 million killed typhoid bacteria, 375 million killed paratyphoid A and 375 million killed paratyphoid B bacteria, the second and third doses each containing 1,000 million killed typhoid bacteria, 750 million killed paratyphoid B bacteria and 750 million killed paratyphoid B bacteria. United States Standard Products Co., Woodworth, Wis. (*Jour. A. M. A.*, March 22, 1924, p. 967).

Staphylococcus Combined Vaccine.—A staphylococcus vaccine (see New and Nonofficial Remedies, 1923, p. 310) marketed in packages of one 10 c.c. vial, each c.c. containing 1,000 million killed staphylococcus albus and 1,000 million killed staphylococcus aureus. United States Standard Products Co., Woodworth, Wis.

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg.
Pittsburgh, Pa.

PROPOSED AMENDMENTS TO THE BY-LAWS OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

As per the requirements of Article XII of the Constitution, the following proposal for alteration is published in the JOURNAL of this Society three months before the next annual session:

Chapter 3, Section 1, to be amended by changing the fourth sentence to read as follows:

Each district (Censorial) shall hold a district meeting once every two years, in the odd years. (As 1925, 1927, etc.)

Chapter 3, Section 3, to be amended by adding as the second sentence in Section 3 the following:

A district meeting (Councilor) shall be held in each district once every two years, in the even years. (As 1924, 1926, etc.)

CENSORIAL DISTRICT MEETINGS

The season for Censorial District Meetings is at hand. The By-Laws of our State Society require that such meetings shall be held in each Censorial District at least every two years.

The responsibility of arranging for such meetings does not fall upon any individual officer. The success of such meetings depends upon the coöperative effort of the district censors and the officers of the county medical societies comprising each district. Experience has demonstrated that censorial district meetings are most successful when the program includes a morning and an afternoon session with the social feature emphasized during the dinner hour. Officers undertaking the arrangements of such programs may receive considerable assistance by consulting the Councilor for the district. On more than one occasion the State Society has helped defray the travel expense of approved speakers from more or less distant points.

In this issue of the JOURNAL will be found proposed amendments to our By-Laws governing the conduct and time for holding censorial and councilor district meetings.

THE MAY BOARD MEETING

The May meeting of the Board of Trustees was held at the permanent quarters of the Society, 230 State Street, Harrisburg, the first Tuesday in May. Reports were received from officers, councilors and chairmen of the three standing committees of the Board.

The Secretary's report conveyed the information that our Society will have a full representation in the 1924 House of Delegates of the American Medical Association.

The report of the Finance Committee recommended that in the future the cash funds of the Society should be kept in that approved financial institution whose rates of interest on deposits and whose financial standing would, with the greatest degree of safety, serve the best interests of the Society. Tentative offers from financial institutions willing to serve as official depository were presented and discussed.

Reports from two members of the Board mentioned cash settlements of approved medical defense cases. In each instance a review by expert roentgenologists on the apparatus used by the defendant physician and the exposure to which the plaintiff had been subjected in the course of examination or treatment, resulted in the finding that the position of the defendant physician was indefensible. Upon receipt of these reports counsel for the defendant in each case recommended settlement before court trial. The Board of Trustees were unanimous in recommending great care on the part of the Committee of Council of the State Society in approving and accepting applications for defense in cases involving alleged malpractice in the practice of radiology. The members also emphasized the absolute necessity for censors of county medical societies observing to the letter the requirements of the Constitution and By-Laws regarding the approval of applications for defense in suits for alleged malpractice, it being pointed out that the censors should undoubtedly act as a quasi grand jury in determining whether or not the applicant for medical defense has a legitimate and defensible case.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to May 17th:

Allegheny: *New Members*—Lawrence J. Davis, Carnegie; Michael E. Farah, McKean Bldg., New Kensington; Grace K. Martin, 1015 Center Ave., Wilkinsburg; Frank C. Rote, 5426 Second Ave.; Thomas G. Tamburo, 163 Wabash Ave., Pittsburgh. *Deaths*—Elwood B. Haworth of Pittsburgh (Univ. of Penna., '84), April 24th, aged 61; Alvin S. Daggette of Pittsburgh (West. Res. Univ., Cleveland, '81), May 13th, aged 68; Fred A. Davis of Pittsburgh (Chicago Homeo. Med. Coll., '94), recently. *Resignations*—John A. Boyd, Christiana; Willard E. Austen, Aspinwall; Robert A. Kilduffe, Los Angeles, Cal.; James P. McMullen, Wellsburg, W. Va.; DeWitt B. Nettleton, Sewickley; Clayton C. Perry, Pittsburgh.

Beaver: *New Member*—Ernest L. Perri, Monaca.

Center: *Death*—John R. G. Allison of Millheim (Jeff. Med. Coll., '84), March 3d, aged 68.

Columbia: *Death*—Charles T. Steck of Berwick (Univ. of Penna., '78), March 29th, aged 71.

Dauphin: *Transfer*—Frances E. Shields, West Chester, from Chester County. *Death*—Maude C. Exley of Harrisburg (Woman's Med. Coll., Phila., '10), April 16th, aged 51.

Erie: *Removal*—Ross W. Thompson from Wesleyville to Wattsburg.

Lackawanna: *Death*—Thomas Monie of Archbald (Med. Chirurg. Coll., Phila., '99), Feb. 10th, aged 56.

Lancaster: *Transfer*—Andrew J. Hesser of Lancaster, from Allegheny County Society.

Lawrence: *Death*—Katherine M. Cook of New Wilmington (Univ. of Pgh., '07), May 1st, aged 42.

Mercer: *New Member*—Myrtle M. Jack, R. D. 21, Stoneboro.

Northampton: *Reinstated Member*—Paul E. Schwarz, 1004 Washington St., Easton. *Transfer*—Thomas H. Powick, Pottstown, to Montgomery County Society.

Washington: *New Member*—Claude B. Lerch, Slovan.

Wayne: *New Member*—Jacob A. Baer, Honesdale.

Westmoreland: *Death*—Charles M. Sloan of Madison (Univ. of Pgh., '97), Feb. 29th, aged 57.

York: *Death*—Laura J. Dice of York (Woman's Med. Coll., Phila., '90), March 25th.

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since April 15th. Figures in first column indicate county society numbers; second column, State Society numbers:

Apr. 16	Jefferson	27–46	6917–6936	$100.00
	Northampton	131–137	6937–6943	35.00
	Westmoreland	139	6944	5.00
	Dauphin	147	6945	5.00
	Fayette	126	6946	5.00
Apr. 16	Philadelphia	1784–1852	6947–7015	$345.00
	Jefferson	47–48	7016–7017	10.00
17	Luzerne	244	7018	5.00
	Beaver	66–67	7019–7020	10 00
	Montgomery	144–145	7021–7022	10.00
18	Armstrong	56	7023	5.00
	Snyder	5–6	7024–7025	10.00
	Clinton	26	7026	5.00
19	Westmoreland	140	7027	5.00
21	Montgomery	146–147	7028–7029	10.00
	Lackawanna	205–210	7030–7035	30.00
24	Huntingdon	39	7036	5.00
25	Wayne	26–27	7037–7038	10.00
28	Mercer	67	7039	5.00
	Northampton	138–139	7040–7041	10.00
29	Dauphin	148	7042	5.00
30	Allegheny	1229, 1231–1238	7043–7051	45.00
May 2	Lackawanna	211–218	7052–7059	40.00
3	Washington	117	7060	5.00
	Somerset	44–45	7061–7062	10.00
7	Susquehanna	17	7063	5.00
	Dauphin	149	7064	5.00
8	Snyder	7	7065	5.00
	Dauphin	150	7066	5.00
9	Lehigh	104	7067	5.00
	Westmoreland	141–142	7068–7069	10.00
10	Beaver	68–69	7070–7071	10.00
	Delaware	92	7072	5.00
	Luzerne	245	7073	5.00
14	Lancaster	122–123	7074–7075	10.00
15	Potter	14	7076	5.00
	Washington	118	7077	5.00
16	Washington	119	7078	5.00
	Venango	49	7079	5.00

FREDERICK L. VAN SICKLE, M.D.
Executive Secretary
230 State St., Harrisburg, Pa.

JUST TO SET YOU THINKING

ANNUAL REGISTRATION

During the 1924 Session of the Assembly of the state of New York a bill was introduced as a State Department of Education measure to amend the Medical Practice Act. The purpose of this bill was to require every person now practicing medicine and hereafter authorized to practice to register annually with the Board of Medical Examiners. There was much controversy regarding the bill.

The above is brought to the attention of the profession of Pennsylvania, as it is possible that at some future time the same question will come up in the Pennsylvania Legislature. The various proposed measures, which will change the conditions of medical practice, should be carefully considered by every member of the profession and due thought given the same so that a mature opinion may be obtained by those who have in charge the legislative program during the sessions of the Legislature.

When subjects such as annual registration are presented for consideration and a majority decision has been reached either for or against the bill under discussion, it should be our business to know what we want or do not want and then stick to that decision. The minority should not stand in the way and oppose such decisions, thus rendering it possible for our opponents to say we do not know what we want.

We have no advice to offer regarding the question of annual registration. It is entirely up to the profession of this State to express their own opinions should such a measure be proposed. What is of utmost importance is to obtain sufficient interest on the part of the rank and file of the medical profession regarding legislation so that we may hear from each county. This applies not only to the subject above mentioned, but also to the One Board Bill, Workmen's Compensation Act amendments and all other questions. It will soon be time for these matters to be taken up in county society meetings, and we trust that each society will be prepared for the legislative session of 1925.

HOSPITALS OF READING

Reading has three hospitals which render an invaluable service to the community by taking care of the sick and injured. The hospitals are St. Joseph's, the Reading Hospital, and the Homeopathic Hospital. In addition to these hospitals, the Neversink Mountain Sanatorium cares for the tuberculous patients.

St. Joseph's Hospital was founded in 1864, has a bed capacity of 130 and conducts a training school for nurses. The hospital is located at the foot of Mt. Penn adjoining the city park and has a well organized staff and nursing corps. The hospital is operated by the order of St. Francis. Additions to the hospital will be begun shortly to provide increased facilities for the medical, surgical and maternity needs of the institution.

The Reading Hospital was incorporated in 1869, has a bed capacity of 140 and conducts a training school for nurses. The hospital is located at Front and Spring Streets, has a well organized staff and nursing corps. The hospital is operated by the Reading Hospital Association. The Reading Hospital has erected two wings of the administration building on the new hospital site which is located in West Reading. The new site consists of twenty-five acres of land so that all the requirements of a modern hospital capable of expansion may be provided. The general plan provides for a new hospital which will be modern in every sense of the word.

St. Joseph's Hospital

Reading Hospital

The Homeopathic Hospital was founded in 1890, and has a bed capacity of 90, and conducts a training school for nurses. The hospital is located on North Sixth Street and is the downtown hospital of Reading, i. e., most of the accidents and emergency cases are taken to this hospital for treatment. Plans are being considered to enlarge this hospital.

The Neversink Mountain Sanatorium was opened in May, 1910, has a capacity of 45, and is located on Neversink Mountain. It was operated by the Berks County Tuberculosis Society

Homeopathic Hospital

THE STATE SANATORIUM, HAMBURG, PA.

THE BERKS COUNTY TUBERCULOSIS SANATORIUM

THE STATE ASYLUM, WERNERSVILLE, PA.

until October, 1922, when the county of Berks assumed the responsibility for its management. Since then this institution has been called the Berks County Tuberculosis Sanatorium.

In addition to these hospitals, the State Asylum for Chronic Insane, located at Wernersville, and the State Sanatorium, for tuberculous cases, located at Hamburg, provide adequate facilities for those physicians who desire clinical experience along these lines. The State Asylum, founded in 1891, at Wernersville, is very delightfully located, and has upward of 1,000 patients. Dr. S. S. Hill, the superintendent, is a member of the Berks County Medical Society, and at all times has extended the courtesies of the institution to physicians interesting themselves in this particular field. The State Sanatorium cares for advanced cases of tuberculous adults, and has many children under observation who have had contact with tuberculous patients. About 400 patients are cared for in this institution. Dr. H. A. Gorman, the medical director, is a member of the Berks County Medical Society, and always is ready to welcome any physician who wishes to see the work done at the Hamburg Sanatorium.

During the annual session at Reading in October, these institutions will gladly welcome any of the visiting physicians and it is hoped that those interested will avail themselves of these opportunities.

John E. Livingood, M.D.

Reading, Pa.

PROPAGANDA FOR REFORM

Citrophan.—This is a "fat cure" exploited to the medical profession and the public by the Gotham Corporation, New York City. The only statement bearing on the identity of citrophan which is made is the claim that it is "a new organic iodin compound." The claims made for citrophan are many and various; back of all of them is the fundamental thesis: "Science has found that the chief cause of obesity lies in the development of alcohol in the digestive tract brought about by the action of yeast bacteria—taken into the stomach in improperly baked bread—and on raw fruits and vegetables." This claim is unsupported by scientific work. The A. M. A. Chemical Laboratory reports that citrophan is sold in the form of tablets ranging in weight from about 4½ grains to more than 7 grains. Analysis indicated that the chief medicinal ingredient was tetraiodophenolphthalein. Sugar of milk, starch, vegetable tissue and traces of an acid insoluble substance (probably talc) were found; also two per cent of an unidentified organic substance. Quantitative determinations showed the composition of citrophan to be: tetraiodophenolphthalein 40 per cent, sugar of milk 52 per cent, ash (including talc) 3 per cent, starch and undetermined 5 per cent. About twenty-five years ago, tetraiodophenolphthalein, the chief medicinal ingredient of citrophan was exploited under the name "Nosophen" as an external and internal antiseptic. It has never attracted much attention in this country. Fangarine is sold (in the form of tablets) along with citrophan. These the A. M. A. Chemical Laboratory found to contain phenolphthalein as its medicinal ingredient. It is evident that citrophan is not a new discovery as claimed, and there is no evidence that citrophan will reduce weight, except perhaps by disturbing the digestive functions. (*Jour. A. M. A.*, March 1, 1924, p. 734.)

Mistura Creosote Comp. (Killgore's) and Tablets Cascara Comp. (Killgore's).—The Council on Pharmacy and Chemistry reports that these products were found unacceptable for New and Nonofficial Remedies. Mistura Creosote Comp. (Killgore's) is marketed with the claim that each teaspoonful contains two minims of creosote "combined with Tonic Aromatics," but the identity and amount of the "Tonic Aromatics" is not declared. The Council declared the preparation in conflict with the rules that govern the acceptance of articles in that it is a mixture of semisecret composition which is marketed with unwarranted therapeutic claims and in a way that may lead the public to depend on it for the self-treatment of serious diseases. Tablets Cascara Comp. (Killgore's) are said to have the following compositions: "Ext. Cascara 2grs.; Podophyllin 1-8 gr.; Ext. Belladonna 1-16 gr." The tablets were found in conflict with the rules that govern the acceptance of articles. The product is marketed under a name which is not descriptive of its composition in that the name indicates that it is a cascara preparation, yet the most active constituent is resin of podophyllum; the product is marketed with unwarranted therapeutic claims and the composition of the tablets is unscientific because there is no evidence that a therapeutic dose of extract of belladonna is useful with a suitable dose of resin of podophyllum or of extract of cascara sagrada. (*Jour. A. M. A.*, March 8, 1924, p. 812.)

The Rectal Administration of Arsphenamin.—The intravenous administration of arsphenamin requires some skill, especially in children and in the obese in whom the veins are not readily accessible. Attempts have been made, therefore, to develop other methods of securing the effects of the drug. Among these, rectal administration has found most advocates. Manufacturers, ever seeking novelties have used favorable reports to market suppositories of arsphenamin. In 1920, the Council on Pharmacy and Chemistry published a report on supsals stating that the evidence for the rectal administration of arsphenamin was distinctly unfavorable. At present the medical profession is being circularized by the Swan-Myer Company in an endeavor to popularize the rectal administration of arsphenamin in the form of suppositories sold as arsphenoids. It is opportune, therefore, that Littman and Hutton, at the request of the Therapeutic Research Committee of the Council on Pharmacy and Chemistry, present a critical review of the literature and the result of clinical trials of the rectal use of arsphenamin. Since most advocates of the rectal administration of arsphenamin stress its importance in the case of infants, the investigators carried out their study with children with active symptoms of congenital syphilis. They used arsphenamin given by enteroclysis and also the supsals suppositories. The authors conclude that the clinical results were too feeble as compared with the intravenous or intramuscular method to warrant favorable consideration of the rectal administration. The investigators hold, moreover, that neoarsphenamin and sulpharsphenamin are now generally used by the intramuscular route in the treatment of syphilis in infants with results that are above reproach. (*Jour. A. M. A.*, March 15, 1924, p. 888.)

COUNTY MEDICAL SOCIETIES

REPORTERS OF COUNTY SOCIETIES

Adams—James P. Dalbey, M.D., Gettysburg.
Allegheny—Lester Hollander, M.D., Pittsburgh.
Armstrong—Jay B. F. Wyant, M.D., Kittanning.
Beaver—Francis H. McCaskey, M.D., Rochester.
Bedford—N. A. Timmons, M.D., Bedford.
Berks—Clara Shetter-Keiser, M.D., Reading.
Blair—James S. Taylor, M.D., Altoona.
Bradford—Stanley D. Conklin, M.D., Sayre.
Bucks—Anthony F. Myers, M.D., Blooming Glen.
Butler—L. Leo Doane, M.D., Butler.
Cambria—Joseph J. Meyer, M.D., Johnstown.
Carbon—Jacob A. Trexler, M.D., Lehighton.
Center—James L. Seibert, M.D., Bellefonte.
Chester—Henry Pleasants, Jr., M.D., West Chester.
Clarion—H. A. Wick, M.D., New Bethlehem.
Clearfield—W E. Reiley, M.D., Clearfield.
Clinton—Clair B. Kirk, M.D., Mill Hall.
Columbia—C. B. Yost, M.D., Bloomsburg.
Crawford—Cornelius C. Laffer, M.D., Meadville.
Cumberland—Calvin R. Rickenbaugh, M.D., Carlisle.
Dauphin—W. Minster Kunkel, M.D., Harrisburg.
Delaware—George L. Armitage, M.D., Chester.
Elk—Joseph E. Madara, M.D., St. Marys.
Erie—Anna M. Schrade, M.D., Erie.
Fayette—Hugh Ralston, M.D., Uniontown.
Franklin—Samuel D. Shull, M.D., Chambersburg.
Greene—Thomas B. Hill, M.D., Waynesburg.
Huntingdon—John M. Keichline, Jr., M.D., Huntingdon.
Indiana—H. Boydston Smith, M.D., Blairsville.
Jefferson—W. A. Hill, M.D., Reynoldsville.
Juniata—W. H. Banks, M.D., Mifflintown.
Lackawanna—G. A. Clark, M.D., Scranton.
Lancaster—J. Sullivan, M.D., Lancaster.
Lawrence—William A. Womer, M.D., New Castle.
Lebanon—W. Horace Means, M.D., Lebanon.
Lehigh—Harold E. Hersh, M.D., Allentown.
Luzerne—H Irvin Evans, M.D., Ashley.
Lycoming—Wesley F. Kunkle, M.D., Williamsport.
McKean—Francis DeCaria, M.D., Bradford.
Mercer—M. Edith MacBride, M.D., Sharon.
Mifflin—F. A. Rupp, M.D., Lewistown.
Monroe—Charles S. Flagler, M.D., Stroudsburg.
Montgomery—John C. Simpson, M.D., Norristown.
Montour—John H. Sandel, M.D., Danville.
Northampton—Wm. A. Finady, M.D., Bethlehem.
Northumberland—Charles H. Swenk, M.D., Sunbury.
Perry—A. R. Johnson, M.D., New Bloomfield.
Philadelphia—Franklin M. Crispin, Philadelphia.
Potter—Ross H. Jones, M.D., Coudersport.
Schuylkill—Arthur B. Fleming, M.D., Tamaqua.
Snyder—John O. Wagner, M.D., Beaver Springs.
Somerset—H. Clay McKinley, M.D., Meyersdale.
Sullivan—P. G. Biddle. M.D., Dushore.
Susquehanna—Robert B. Mackey, M.D., Montrose.
Tioga—H. A. Vosburg, M.D., Arnot.
Union—Oliver W. H. Glover, M.D., Laurelton.
Venango—John F. Davis, M.D., Oil City.
Warren—M. V Ball, M.D., Warren.
Washington—Charles C. Cracraft, M.D., Claysville.
Wayne—Hugh Stevenson, III, M.D., Honesdale.
Westmoreland—D. Allison Walker, M.D., South West.
Wyoming—Herbert L. McKown, M.D., Tunkhannock.
York—Maurice C. Wentz, M.D., York.

June, 1924

COUNTY SOCIETY REPORTS

BERKS—MAY

The Berks County Medical Society at its May meeting was favored with the following address by Joseph Head, M.D., D.D.S., Philadelphia, Pa:

ORAL DENTAL INFECTION AS A SOURCE OF SYSTEMIC DISEASE

That diseases of the teeth and gums can cause arthritis, endocarditis, nephritis and innumerable other serious systemic disorders is now too well known to debate seriously, and yet there are still a surprising number of intelligent physicians who are wearily skeptical of this well established fact. This skepticism on their part is due to two prime causes: First, the natural inertia of the average human being to accept any new thought that would change his average automatic mental routine of procedure; and second, the earnest open-minded physician is frequently deceived and disappointed because his patients suffering primarily from mouth infection do not recover from their general symptoms, because the mouth infections are not thoroughly and scientifically treated by those who are intrusted with this work. However, this skepticism is fortunately becoming less and less common for the principle of organic disease arising from any focal infection whatsoever, be it teeth, tonsils, sinuses, gall-bladder, appendix, etc., is being generally accepted, and when the focal infection is generally removed and followed up by the judicious use of a vaccine, the results are usually so impressively satisfactory that one or two cases are sufficient to convince the most skeptical. Therefore, when a specialist is intrusted with the task of removing a focal infection of a certain type he should use every endeavor to remove it absolutely before he states that it has been removed, lest not only will the patient in question not recover, but the great principle of curing by the removal of focal infections will receive a setback, and all the other patients that might have been cured by this principle will continue to have their symptoms merely palliated by drugs given at haphazard.

Of all the sources of focal infection in relation to systemic disease I believe the teeth and gums are by far the most important because abscessed teeth during mastication receive a pressure of from forty to eighty pounds by which toxins and pathogenic microörganisms are driven into the jawbone and thence into the circulation to be distributed throughout the body. The tonsils, the gall-bladder and the numerous other recognized sources of focal infection all distribute their disease-bearing products through absorption, or at best by a gentle massage, but the injection of poisons under high pressure is a peculiarity of the abscessed teeth alone.

Pyorrhea alveolaris, in spite of its name, in ninety-nine cases out of a hundred is not associated with pus flowing from the gums. It is ordinarily a streptococcic infection associated with any or all of the three following types of germs: influenza, catarrhalis, pneumococcus. Where there is Vincent's angina arsphenamin given intravenously is essential but even here mouth cleansing associated with a peroxid mouth wash is frequently successful in effecting a cure. This so-called pyorrhea alveolaris starts at the age of six or seven, just as soon as the permanent teeth erupt through the gums since the spaces between the teeth are not cleansed. The masses of bacteria rest undisturbed year in and year out, attacking the teeth if they are acid-bearing, attacking the gums if they are either acid or alkaline in their action, until after twenty-five or thirty-five years of undisturbed occupation, pyorrhea or mouth infection is established, and the unhappy sufferer moans: "It is the hereditary curse of the family. My father and grandfather lost their teeth in a similar way and of course I cannot hope to escape losing mine." All he needs to escape his hereditary curse is to learn to cleanse his teeth and gums once a day thoroughly.

The fact is generally recognized that proper mechanical cleansing will keep healthy mouths healthy, but what is not generally recognized is the startling fact that vigorous cleansing of an infected mouth will in many instances speedily cure an infection that is already well established. The rapidity and certainty with which infected gums can be cured by daily vigorous scrubbing can only be explained by a twofold action. First, the mechanical removal of the bacterial masses of infection; second, the rubbing into the tissue of the infecting germs which stimulate the formation of tissue defense ferments. These ferments not only are formed in sufficient quantity to destroy the invading germs, but an excess of the ferment is formed that will remain as a defense against a renewed attack. And this defense will tend to be effective continuously if the vigorous mechanical cleansing is kept up. For the moment a portion of the tissues start to become infected that moment will the vigorous friction of cleansing drive the infection into cells filled with blood serum, and thus will a new effective supply of defensive ferment be automatically developed for further complete protection against bacterial invasion.

The only instrument capable of cleansing the spaces between closely fitting teeth is dental floss, and this should be swept over each approximating surface of the teeth at least once a day, and better, twice a day. This will break up and remove the bacterial masses that collect year in and year out because the tooth brush erroneously is supposed to remove them. This is why tooth decay, nine times out of ten, starts in between the teeth, this is why pyorrhea alveolaris or gum infection, ninety-nine times out of a hundred, starts in between the teeth almost as soon as the gum has receded sufficiently to make an interdental space. Almost all, if not entirely all of this can be remedied if at the age of five the child is taught to cleanse in between the teeth, not for the sake of being clean but for the sake of growing up strong and healthy. No child wants to be clean, it prefers to be dirty, but every child wishes to grow up strong and well. Children will labor and strive to improve their bodies for athletics and if they are taught that the use of dental floss is just as necessary to a healthy adult life as arduous exercise, there is no question that dental floss will be used, and effectively used.

But let us now consider the use of the tooth brush as a means of removing the bacterial masses from the exposed surfaces of the teeth and gums. Just as those who never use dental floss never cleanse in between the teeth, so do the great majority of those who brush the teeth never really cleanse them. The cleansing action of a tooth brush can only lie in bristle friction and most well-meaning people either use strokes of the brush that never get beyond a pivoting of the long bristles or they use brushes so large that there is neither room to move them nor to place them against the wisdom tooth.

The wisdom tooth in structure is just as sound as any other tooth and it has its bad name simply because it is never cleansed. And because the back molars are badly cleansed that is the reason why they are usually the first to loosen from infection. Not only are they, as sources of infection nearest to the tonsils, but they also have the greatest amount of infection to hand on. The great test of a tooth brushing method is—does it cleanse where it is designed to cleanse? In plain words the way to brush the teeth and gums is to brush them.

Obviously a too large brush is useless. To use a two-inch brush with bristles half an inch long where there are only two and a half inches for free action means that there will be practically no bristle friction. And this is practically what occurs in most mouths during the process of tooth brushing. In the mouth the free space in any given line where a tooth brush can operate is seldom over two inches and a half. The tooth brush being ordinarily two inches long generally reduces the movement of the brush to about half an inch, and this half inch is generally taken by up the spring and pivoting of the bristles, so that with all the morning and evening attempt at tooth brushing, there is very little bristle friction at all. Therefore we should use a narrow three-row bristle tooth brush not over an inch and a quarter long with bristles not over a quarter of an inch in length. This will allow sufficient room for gentle motion of the brush in the mouth. If the bristles are too stiff at first the brush should be placed in hot water for a few minutes before using. Healthy gums can bear the same scrubbing as the finger nails and with the same benefit. As before stated, unhealthy inflamed gums when given a vigorous scouring with a stiff brush twice a day, in the course of a week or ten days, will become firm and healthy, and no other treatment, to my knowledge, will accomplish the same results. While brushing of the gums is of prime importance the intense pain occasioned by the first two weeks' vigorous work is as severe as the pains in the back of the athlete when he first starts to get himself in condition. The trainer tells the athlete to go on with his work and that it will be all right, but the poor patient when he uses the brush vigorously is warned that he is injuring his gums, and is only too glad to stop, being sure from his sore mouth that the advice is correct. The gums to be healthy must be scrubbed so as to remove the dead epithelial scale, which will act as food for bacteria, and the bacterial masses must also be removed. Scrubbing infected gums cannot result at first in anything but further infection that may even at times cause a slight fever, and yet the gums will heal and the bacteria cannot be removed from within the tissues unless this severe ordeal is endured. The severe reactions caused by brushing infected gums cannot be anything else but auto-inoculation. For otherwise it would be incredible that day by day the gums should continue to be so sore and inflamed and then between the seventh and tenth day they suddenly get strong, hard and firm so as to stand any amount of brushing.

In a minor degree the same phase is noted when the dental floss is first used on infected gums. The gum at first naturally bleeds and becomes further infected from the use of a string that drives the infecting organism into them. This soreness has been used as an argument against the use of dental floss, but it is no just argument as a few days' perseverance will invariably show. For the persevering scientific use of dental floss will, if the infection has not proceeded too far, be invariably followed by improvement, if not a complete recovery of the infection between the teeth.

Two most vital questions are confronting the medical world to-day: May the tip of a nonvital root be free from infection? May a vital tooth be a source of general focal infection? The following laboratory and clinical data would indicate that a pulpless root tip may be free from infection, and that a vital tooth may be a source of general focal infection.

Two and a half years ago a lady, age 45, came to me with an aching upper left first molar. The x-ray showed no evidence of apical or gingival infection. The left upper second and third molars had been lost some years previous. There was a large gold inlay in the crown of the tooth. This was removed, the pulp exposed and removed under novocain and the root canals treated. After several treatments the root canals were filled with gutta percha points in one of the recognized standard ways. The pulp chamber was then sealed with a silicate filling and the patient was dismissed.

At the end of two years she returned and while the tooth was comfortable an x-ray film showed that the gum had receded posteriorly so that the bifurcation of the lingual and posterior buccal roots had become exposed—also that the infection had reached to the tip of the lingual root and almost to the tip of the posterior buccal root. The anterior buccal root seemed perfectly sound and free from infection from neck to tip. Obviously the tooth had to be extracted but it was decided to test whether the tip of the anterior buccal root was free from infection.

Three Noguchi culture tubes were placed on the stand ready for use. Iodin was flowed around the neck of the molar and dried with hot sterile air and the tooth extracted with sterile forceps by a buccal twist that removed the tooth and the attached external alveolar plate. The tips of the three root tips were then aseptically clipped off into the three respective Noguchi culture tubes and each tube carefully labeled as to which root tip it contained.

These three tubes were then sent to the laboratory of Dr. Claude P. Brown, an expert bacteriologist. Dr. Brown was ignorant of the origin of the specimens and treated them merely as three routine cultures. The treatment for all three was identical and when the reports came in the cultures made from the lingual root revealed the presence of hemolytic and non-hemolytic streptococci and from the posterior buccal root, hemolytic streptococci. The culture in which the tip of the anterior buccal root had been placed was sterile.

This would seem to indicate that a pulpless root tip may be sterile, and this experiment seems to be perfectly conclusive as there were two controls, showing that if the anterior root had been infected with microörganisms the culture medium and treatment was of a nature favorable to their development.

There are four other cases where I had removed sterile fibrous masses from imperfectly treated regions where root tips had been excised. There are also recorded five instances where the tips of extracted devitalized roots have proved sterile but the lack of success in culturing might have been due to the fact that the microörganisms were present but did not grow in the culture medium used.

In plain words, in the last nine cases mentioned there were no corresponding control tests and while they were interesting they were not considered conclusive but now they may be considered at least as adding weight to the significance of the controlled experiment just cited.

We will now discuss the second question: May a vital tooth be a source of general focal infection? The case was that of a physician who is a keen diagnostician. He had been suffering from osteo-arthritis for a year and a half. The removal of infected teeth and tonsils with the use of autogenous vaccines had coincided with a steady improvement so that from being bedridden and in constant pain from swollen joints he was able to get up and continue his interrupted work. All of his teeth contained living pulps. Suddenly the pain and swelling of the joints returned and he was so completely overwhelmed that all professional engagements had to be cancelled. A careful study of the case revealed the fact that one of the molars contained a large amalgam filling. The history of the insertion of this filling showed that it extended far into the tooth and great care had been used to avoid exposing the pulp. All of the other teeth were without fillings and this tooth was perfectly comfortable under mastication and showed no irritation to thermal change. Nevertheless it was decided to take a chance and extract the molar. This was done at 12 o'clock in the day and by 6 o'clock the inflammatory symptoms had subsided and he continued his occupation as before.

Let us now speak of the macroscopic and microscopic condition of the tooth at the time of extraction. The tips of the roots seemed perfectly sound, there being no signs of infection. The tips, however, were clipped off with sterile forceps into Noguchi tubes. *The pulp terminals were blood red instead of white.* This was the sole pathological variation from the normal. The culture tubes in due time revealed the presence of hemolytic, pigmented and non-hemolytic streptococci in each tube.

This case is reported not with the idea that such an improvement is unprecedented after the removal of a focus of infection. Those who have removed infected teeth and infected tonsils have observed many recoveries as rapid and as remarkable. The fact that the patient was a physician and a great diagnostician was mentioned because the sudden cessation of pain might be considered to be due to hysteria or autosuggestion. As a matter of fact the change occurred in the presence of profound skepticism and scientific discrimination.

As far as any one case could prove anything this seemed to demonstrate conclusively that a living pulp in a tooth free from clinical signs of abscess could cause serious general focal infection.

SUMMARY

Pyorrhea alveolaris or ordinary mouth infection is caused by year-long collections of filth and germs. The prevention, and ordinarily, the cure is to cleanse the teeth thoroughly once or twice a day with a small brush and dental floss. And that the cleansing may be thoroughly done it is imperative that no noncleansable crowns, fillings or bridges shall be fixed in the mouth. All teeth that cannot be made free from infection should be extracted and the sockets curetted and treated surgically until they are healed.

An alkaline peroxid wash of from 1 to 3 per cent is most valuable if it is held in the mouth for two minutes after each daily cleansing. In the absence of thorough mechanical cleansing each day all dentifrices and mouth washes have no therapeutic value and are of no benefit except to the manufacturers of the nostrums whose misleading pseudoscientific advertisements beguile our credulous citizens into the annual expenditure of millions of dollars. The grit in the chalk dentifrice actually cuts away many pounds of tooth structure each year while inadequate therapeutic values mislead those who wish to acquire healthy mouths into neglecting the truly effective daily mechanical cleansing of the bacterial masses from the teeth and gums.

CLARA S. KEISER, M.D., Reporter.

DAUPHIN—MAY

Dr. Charles Harrison Frazier, John Rhea Barton Professor of Surgery at the University of Pennsylvania, read an interesting paper on some pituitary problems at the May meeting of the Society.

After some introductory remarks on the anatomy, histology, and the development of the pituitary, Dr.

Frazier discussed the physiology and pathology of the several parts of the gland as follows: The anterior lobe regulates the growth of bones, cartilage and connective tissue, the distribution of fat, and the development of the sexual glands. The pars intermedia is probably concerned with the regulation of blood pressure and urinary secretion; stimulation of the posterior lobe apparently produces a diuretic effect, stimulates the secretion of milk, increases the tone of the uterus and depresses the blood pressure. There is a close interrelation between the thyroid and the anterior lobe. Eighty per cent of the pituitary neoplasms are adenomata of the anterior lobe. Hyperpituitarism usually means an adenoma, and hypopituitarism a cyst.

Clinical Symptoms: Increased function of the anterior lobe produces gigantism if the subject is adolescent, and acromegaly in the adult. Decreased function results in dwarfism. Achondroplasia is ascribed by some to hypopituitarism. Increased function of posterior lobe causes increased metabolism and decreased sugar tolerance, while decreased function of posterior lobe causes Fröhlich's syndrome. The clinical manifestations are varied and may be conveniently divided into ocular, pressure (headache and vomiting) and endocrine. Dyspituitarism presents a dual picture.

The examination of the referred patient includes basal metabolism, endocrine investigation, and ocular examination—especially eye-ground and visual fields. Hemianopsia is a very valuable and frequent finding. (Fifty per cent of the cases that come to Dr. Frazier's clinic are totally blind in one eye.) The x-ray of the sella turcica is essential for complete diagnosis. Headache and vomiting resulting from intracranial pressure as a rule do not occur in pituitary tumors. The headache of pituitary tumor is usually bitemporal or frontal, never occipital, and is due to pressure within the capsule itself. Hence it is not relieved by decompression. Neighborhood symptoms due to interference with the function of the adnexa frequently occur and are often falsely ascribed to the pituitary *per se.*

A series of lantern slides depicting the clinical types and the surgical technique were shown.

The postoperative administration of pituitary substance, although a routine procedure, has rarely if ever in Dr. Frazier's experience produced any positive results.

A short discussion of the paper followed.

W. M. Kunkel, M.D., Reporter.

ERIE—MAY

The Erie County Medical Society met May 6th at Central High School. The public was invited to hear Dr. O. P. Kimball of Cleveland discuss the problem of goiter prevention. Dr. Kimball has done an enormous amount of work in the prevention of goiter in the public schools. Erie being in the "goiter belt" the public was interested. Dr. Kimball made a plea to administer iodin to every pregnant woman routinely; this would take care of the added need of iodin for the expectant mother and also start the baby right. Many newborn infants in these regions are born with enlarged thyroids. One ounce of syrup of hydriodic acid given every other month to prenatals is advised and serves the purpose admirably.

Another period warranting careful attention and preventive measures is at the time of adolescence and just before. The iodostarin tablets given once a week during this time take care of the prevention of simple goiter in young girls in those regions where goiter is endemic. All enlarged thyroids in the male are tumorous and the enlargement started before they were born. It is the easiest pathological condition in the world to prevent.

Anna M. Schrade, Reporter.

LUZERNE—APRIL-MAY

The Luzerne County Medical Society met in the Medical Building on April 2, 1924, at 8:35 p.m. Dr. K. Winfield Ney, Professor of Neurosurgery at the New York Polyclinic Hospital, gave a most interesting and instructive talk on the recent advances in neurosurgical diagnosis with a lantern slide demonstration, particularly stressing the diagnosis of brain tumor and the benefits to certain cases of epilepsy and other mental disorders obtained by the injection of air into the lateral sinuses.

At the second regular monthly meeting of the Society, held in the Medical Building on April 16, 1924, a very excellent symposium on Incipient Tuberculosis was then presented to the Society. Papers were read as follows: Diagnosis of Incipient Tuberculosis, by Dr. Wilson C. Marsden; Treatment of Incipient Tuberculosis, by Dr. Max Tischler; Incipient Tuberculosis in Relation to the Nose and Throat, by Dr. Lovisa I. Blair; Prodromal Cases of Incipient Tuberculosis, by Dr. Sarah D. Wyckoff. In the discussion the following men spoke: Dr. Armstrong of White Haven Sanitarium, Drs. Meyers and Gagion, and the discussion was closed by Drs. Marsden, Tischler and Wyckoff.

The May meeting was held in the Medical Building on May 7, 1924, and was called to order by President Scheifly at 8:40 p.m.

Dr. Rumbaugh read a resolution on the death of Dr. Ruth Lance. It was moved and seconded that the report be accepted and a copy sent to the family. Carried.

The following essays were then read by members of the Lackawanna County Medical Society: Dr. A. J. Winebrake, on "The Use and Abuse of Pituitary Extracts in Obstetrics"; Dr. D. E. Berney, on "Interdermal Vaccination"; and Dr. D. A. Webb, on "Cleft Palate," with lantern slide demonstration.

In the discussion Drs. O'Malley, Meyers, Gibby, Berney and Donohue spoke, and the discussion was closed by Drs. Winebrake, Berney and Webb.

H. Irvin Evans, M.D., Reporter.

PHILADELPHIA

April 9, 1924

The President, Dr. F. Hurst Maier, in the chair.

Dr. Ralph H. Spangler: "Some Observations on the Mechanism and Therapeutic Effect of the Nonspecific Protein Reaction."—The observations in this paper are based on the intramuscular injection of venom protein—crotalin solution. Until eight years ago specificity in medicine was firmly inculcated, so that observations published from 1910 to 1913 received little investigation and reports of injection of nonspecific protein made seven or eight years ago were viewed with skepticism. To-day immunologists recognize that nonspecific therapy may be more efficacious than the specific reaction in creating resistance to disease. The injection produces a local reaction which may vary from a leukocytic stimulation to shock and vasomotor paralysis, depending upon the patient, the material used and the method of injection. At first it was thought that a local effect was necessary for a systematic reaction, and many kinds of organic biologic substances were employed. Ten years ago the mechanism was hard to explain, the results were empirical, but now specific factors are known which influence the course of the pathologic process. Nonspecific protein alters the reactivity of the organism through cell stimulation, plasma activation and alteration of the cell membrane.

As a satisfactory agent for the nonspecific reaction it was necessary to find a protein chemically defined, the dose of which could be accurately measured. Crotalin solution increases the clotting time of the blood and the permeability of the blood vessel walls, is a hematopoietic stimulus and improves the general metabolism. It is an albuminoid, containing a globulin and a peptone. The globulin acts on the blood and vessel walls, increasing the clotting time and permeability; the peptone acts on the nervous system, causing paralysis in large doses. The local reaction from snake venom varies with the dose and susceptibility, usually being limited to a small cellulitis which reaches its height in 24 to 36 hours. Systematically, doses of from 1/400 to 1/50 gr. produce no chill, no fever or sweating or nausea. Occasionally there occurs a euphoria. Given in a series of over six hundred cases of epilepsy, snake venom has given striking results: the convulsive seizures are reduced in number; there is improved metabolism, with increase in weight, in red blood cells and in hemoglobin, and there is a feeling of well-being; the resistive powers are increased, as shown most strikingly during the epidemic influenza; and it acts as an adjuvant to other drugs (luminol, iodids, salicylates, etc.) and to the endocrins. There is a rise in the red cell count following the injection; therefore the drug is not hemolytic. The white cells show a primary leukopenia without a subsequent leukocytosis; the polymorphonuclears are reduced and eosinophiles increased. Doses large enough for anaphylaxis show an increase in eosinophiles as high as 25%, and the eosinophiles are used as a guide for regulation of the dosage. If they are not down to 4% by the fifth day after injection, the injection is not repeated; if there is still 8-10% eosinophiles on the second day the dose is not increased.

Dr. Spangler then summed up his paper and in closing said that chemically, physiologically and therapeutically, crotalin solution meets the requirements of a biologic agent to produce nonspecific resistance.

In discussion, Dr. Kolmer said that this form of therapy is now attracting much attention. It may not be nonspecific. He doubts that the results are due entirely to the protein of venom itself, but thinks the effects may be also due in part to the hemolysis of erythrocytes, liberating hemoglobin, which in itself can bring about results of this nature. The mechanism is as yet unknown. There seems first to be a distribution of the colloids of the plasma and congestion, followed by an increased permeability of the endothelium of the capillaries. Nonspecific therapy is especially beneficial in bacterial infections, due probably to an increase of congestion about the foci of bacteria and absorption of the bacterial products, leading to an auto-immunization and hence a specific stimulation. He cannot confirm the view that antibodies are stimulated by nonspecific injection unless in the presence of a bacterial infection There is aways an increase of serum proteases, which have a therapeutic value, the bone marrow is stimulated and leukocytes are increased. Most important, however, is the greater absorption of the products of bacterial activity, which bring about a specific effect.

Dr. Boston, in an investigation of epilepsy begun 21 years ago, injected into rabbits 10 m. of epileptics' blood, with results almost identical with the results presented by Dr. Spangler. He noted two types of eosinophiles—those with coarse granules, comprising about 1/3, and those whose granules were fine. The animals were seized with a trembling when the eosinophilia was at its height. Rabbits injected with this blood, exposed to pneumonia which killed the members of the group not injected, did not take the disease. He used the venom serum during the epidemic influenza with unbelievable results.

Dr. Moore mentioned the value of the nonspecific therapy in arthritis and said that he thought the increase in red blood cells might be due to the stimulation of the bone marrow by hemolysis, and urged that the urine be examined for methemoglobinuria.

Dr. Orlando H. Petty and Dr. Kenneth F. Knode: "Hypoglycemic Collapse, or Insulin Shock."—Experimental hypoglycemia was reported in 1908 produced by the intravenous injection of normal saline and prevented by the addition of calcium chlorid. In 1922 Banting discovered insulin. Other preparations have been claimed to equal insulin, but none fail to give an overdose, and until proved good, insulin is the only preparation to use with safety. Hypoglycemia occurs especially in cases showing undernutrition. The normal blood sugar runs from 80 to 120 mgm. per 100 c.c. of blood. A study made on 431 cases showed a normal fasting blood sugar of 70 mgm. or less per 100 c.c. In cases of diabetes (blood sugar over 300 mgm.) symptoms of insulin shock are observed when the sugar is reduced to the normal range. The symptoms are not due to the disappearance of sugar, but to the toxic condition in the nerve cells. Insulin creates a vacuum for sugar in the tissue cells and juices by the increased combustion of sugar, the condensation into glycogen and the reduction of sugar into substances similar to the fatty acids. Subjectively, the patient feels nervous, weak and hungry. The objective findings are weakness, hunger, sweating, tremors, twitchings, drowsiness, drawling speech and confusion. These usually occur from two to four hours after the administration of insulin. If the patient becomes unconscious he should be given an injection of epinephrin, and sugar by mouth, or 15 to 20 gm. of glucose intravenously if necessary. Hypoglycemia can be avoided by regulation of the dose and time of administration, watching that the urine is sugar free and the blood sugar not below 150 mgm. Unconsciousness can be readily differentiated from diabetic coma and can be treated.

Dr. Knode then read data from 150 cases treated with insulin, in whom there occurred 31 collapses among 16 patients. (Six collapses occurred in one patient 65 years old, weighing 70 lbs., with a gangrenous foot, who was receiving 105 to 115 units of U insulin in 24 hours.) Two patients were 13 years old, the rest adults, the average weight being 100 lbs. The largest dose was given before breakfast, the smallest at noon and a medium dose at night, the administration 10 to 20 minutes before a meal. Hypoglycemia occurred usually between seven and nine p. m. The average dose was 65 units per day. The blood sugar averaged 71 mgm. In twelve of the cases of collapse no treatment was necessary; seventeen were given carbohydrate (average of 14 gm.) by mouth; two were given carbohydrate intravenously (27 gm.) and by mouth 20 gm. Orange juice and cane sugar and, once, coffee, were used. The symptoms of collapse were as follows: perspiration, weakness, hunger and incoördination in 100%; patellar reflex increased in 50%; pulse and respiration were not affected; two became unconscious, one loquacious and many dulled or cloudy; two experienced diplopia. Complete relief from collapse was obtained in five minutes, by the administration of carbohydrate.

In discussion, Dr. John H. Musser, Jr., accentuated the fact that proprietary preparations for the administration by mouth are worthless. Insulin shock, inasmuch as it can be so readily treated, is not dangerous. Frequently it is caused by failure to eat after taking insulin, or by vomiting of food, since carbohydrate must be present. Insufficient kidney action may also be a factor, causing a retention of insulin.

Dr. F. M. Allen, of Morristown, N. J., emphasized the necessity of accuracy in handling insulin, with blood sugar kept as near normal as possible and the urine sugar free.

Dr. Hare said that he thought insulin a pretty sharp tool with which to work if out of 150 cases there were 31 collapses. Insulin is only a crutch, and there is insufficient emphasis placed on the diet. He questioned as to the best kind of glucose to use.

Dr. Riesman emphasized the uselessness of insulin by mouth. Insulin administration by inunction is being studied for use in children. Bad results reported from the glucose injection in cases of shock were attributed to the fact that fermentation of the glucose had taken place.

Dr. Robertson, questioning the relationship between blood and urinary sugar, asked if it were necessary after once having determined the blood sugar, to take more than the urinary sugar.

Dr. Petty stated that all cases showing collapse were undernourished, with no reserve. Glucose, c.p., Merck's or Pfanenstiel's, was used, with fractional sterilization in an Arnold sterilizer for intravenous use. This sugar has been found best by experiments carried on in Toronto. Blood sugar is relied upon largely.

Fred. M. Allen, M.D., of Morristown, N. J. (by invitation): "Salt Free Diets in Hypertension."—The subject of hypertension is in a chaotic state; no one knows what it is. "Blood pressure above normal"—but what is the standard? A continuous systolic pressure above 170 may be called hypertension. The pathological nature is uncertain and perhaps rests on certain changes in the small blood vessels in the kidney and maybe elsewhere in the body. As to causes: heredity predisposes; nervous stress is not responsible; the endocrin source is doubted; obesity is not a cause; no definite diet can cause it—possibly there was at some time an infection or intoxication which injured the kidneys or the small blood vessels, and the above contributing factors have aggravated the condition.

In considering treatment, the efficacy of the limitation of protein and red meats has not been proved; milk diet is shotgun, limiting protein and salt to some extent; undernutrition does not bring the tension down. Hydrotherapy, electricity and radium temporarily reduce the pressure, but are merely palliative. Adjuvants are rest in bed, .bleeding, climate, removal of infectious foci, spinal puncture and some drugs, as digitalis, purgatives and in mild cases the nitrites. The iodids and diuretics are of no value. Many think hypertension is compensatory, but the kidney function is improved by a decrease of blood pressure. The purpose of the salt-free diet is to reduce pressure, relieve symptoms and check the progress and mortality.

Hypertension is regarded as an entity, with age a modifying factor. It is more common in the aged, but more severe in the young. He groups the cases as follows: (1) with plasma chlorids above 580 mg. /100; (2) with plasma chlorids less than 580 mg. /100; (3) complicated with nephritis; (4) complicated with diabetes. Diet is the only treatment employed. This is not simple and requires institutional care. It is hard to get the urinary chlorids down to 1 gm. daily and maintained for several weeks. The average diet as prescribed is not strict enough. The diet must be made palatable with flavors other than salt employed. Symptoms of salt privation are weakness, decreased appetite, nausea or vomiting. Two gm. of salt per day will relieve this condition.

This treatment has been used over 5 years in 300 severe cases. The normal blood pressure was restored in about 20%. It was reduced and the subjective symptoms improved in 40% more. Transitory benefit was obtained in an additional 10% and there was 30% of failures. Functional treatment was carried out in cases with organic trouble.

There is no prognostic guide. Relief of symptoms occurs in a majority of cases of impending heart failure, pulmonary edema, angina pectoris and retinitis. The total mortality in 5 years has been under 15%. It has not changed with a duration of observation, and the benefit persists. All cases of hypertension respond to the same type of treatment.

Dr. Hobart A. Hare asked how the absence of salt benefits hypertension. He stressed the factor of heredity and type and mentioned the variation in degree of arterial change which occurs in various parts of the body, e. g., atheroma of the coronaries, renal sclerosis. The nitrites are valuable diagnostically, since the degree of spasm is an indication of the degree of fibrosis. The iodids, especially KI., are protoplasmic depressants and therefore decrease the vigor of the heart and arterial tree and lower blood pressure. A pathologic norm is developed by individuals. High tension cases develop a degeneration of the muscular and elastic coats. Electric cabinet baths reduce blood pressure and keep it reduced over long periods.

Dr. Robertson said that he has watched a case of hypertension over a long period of time. It is difficult to get the coöperation to reduce the diet to 2 gm. of salt.

Dr. Petty cited experiments on rabbits which showed normal maintenance on a salt-free diet, and said that in 75 cases treated with the self-free diet his results have coincided with Dr. Allen's report.

Dr. Outerbridge asked whether or not studies had been made on the hypertension of pregnancy.

Dr. Allen said that he does not know how salt privation acts. His theories are not yet proved. Many patients have an 'invisible edema" and are apoplectic, with tense turgid skin and slight tendency of the ankles to swell at night. Heredity is not more marked here than in diabetes. When the pressure comes down under diet he does not believe there has been established a pathologically high norm. The plasma chlorids are nearly always decreased. The equilibrium between the blood and the tissues is altered and on a salt-free diet the plasma chlorids may go up. He urged that salt-free diet be tested in eclampsia, though he warned that in the presence of an active toxin the dietary treatment is not omnipotent.

April 23, 1924

The President, Dr. F. Hurst Maier, in the chair.

Professor Ludwig Aschoff, of the University of Freiberg, Germany: "Gall-Stones and the Pathology of the Biliary Passages."—Naunyn, in 1892, first brought forth a theory of the origin of gall-stones, connecting them with infectious processes. This theory has been amplified, but not changed; the constituent factors in gall-stone formation have increased. There are now known to be two groups: first, the noninflammatory (pure cholesterin and pigment stones) and second, the inflammatory. The pure cholesterin stones show the following characteristics: they are all cholesterin; they show a coarsely crystalline structure resembling intertwined tree trunks and lack lamellation; they are solitary; there is no sign of inflammation in the gall-bladder; they occur in individuals who have shown no symptoms of gall-bladder disease; they are found in all ages, and especially after pregnancy.

The origin of the cholesterin stones is still in dispute. Some hold they are due to disintegration of the gall-bladder epithelium; others that there is a precipitation of cholesterin from the bile; while a third, and most plausible theory is that the cholesterin is excreted by the liver cells. Experiments on rabbits have shown that an increase of cholesterin in the blood brings about an excretion by the liver into the bile. The same thing was found in bitches whose young were removed before suckling. Therefore why not blame the liver for a pathologic excretion? In another group of experiments the gall-bladders of dogs were ligated, the contents aspirated and analyzed, and then analyzed at a later date. If the epithelium secretes the cholesterin we would expect to find an increase of cholesterin here, but some showed a decrease (by absorption). In the cases where an increase was found the walls of the gall-bladder were inflamed, and the increase was attributed to inflammatory exudates. Small cholesterin stones have been formed experimentally in rabbits by increasing the cholesterin content of the blood, thereby proving their metabolic origin and their occurrence when there is an increased retention of this substance. Hence the treatment of obesity too strenuously carried out may lead to stones. The more rapid the emaciation, the more quickly does cholesterin occur in the bile, until there is finally a precipitation. Also, there is a connection between the body constitution and cholesterin formation. Dioxycholic acid has a power of dissolving gall-stones three to four times as great as the cholates, taurocholate and glycocholate. Bile acids are built by the liver cells at the cost of cholesterin, therefore the amount of cholesterin depends on the proportion of bile acids, which in turn depend upon the diet and the excretory power of the liver. This explains the lack of infection in gall-bladder catarrh, why the crystalline structure and absence of lamellations, and why they occur singly.

Dr. Aschoff has never found more than one coarsely crystalline cholesterin stone. Pure cholesterin stones arising from metabolic disturbance constitute one-third of all varieties of gall-stones, and therefore a consideration of metabolism is urged upon the physician as a prophylactic measure. True gall-stone disease (and the pure cholesterin stone gives no symptoms unless impacted) gives symptoms of obstruction, with repeated attacks, the patient is afebrile, the gall-bladder is not inflamed, and there may occur bile stasis, which leads to a hematogenous infection. Irritation of the neck of the gall-bladder causes disturbances in the sphincter region, increased bile secretion and an ascending infection of the gall-bladder and liver which results in empyema or hydrops of the gall-bladder. Absorption of the empyema may to some extent loosen the stone and bring about some draining of the inflammatory exudate. Fresh bile joins the stagnant contents, causing a precipitation of bilirubin cholesterin, which settles as rosettes of a thick crystalline structure on the original stone, thereby forming combination stones—the largest stones found in the gall-bladder. Independent increments form the small faceted pigment calcium stones. Pure cholesterin stones are significant in that they indicate a metabolic disturbance; they are harmless (there is no mechanically produced inflammation of the gall-bladder); unless infection is added they do no damage; by impaction they favor infection.

Other stones that arise most probably from a disturbed metabolism are the pure pigment stones. These are always multiple, are usually found in the gall-bladder, are mulberry-shaped, rarely spherical or faceted, vary in size from a grain of rice to a pea, are brittle and hard and may disintegrate into coarse black sand and are, like the pure cholesterin stones, homogeneously built, without layers. They are probably formed in the intrahepatic gall passages and indicate some dyscrasia. They contain bilirubin calcium and traces of cholesterin. When obstructive, they give the same symptoms as the cholesterin stones, and they too may form combination stones.

Lamellated stones have an infectious origin, no preceding metabolic tone being present. They have an intimate relation to inflammation of the gall-bladder. There are two groups of these, the faceted and the cylindrical. The faceted stones occur in large numbers, are small, movable, suspended in the bile, with the same material in nucleus and cortex, and are harder at the cortex. The color is the same in all the stones in the same gall-bladder. All these stones originate at one time and grow equally, with the infectious attacks. No new stones are formed. The center is rich in pigment calcium, the cortex in cholesterin. If these crystalline masses are removed there remains a lamellated framework of protein, which explains why the fine columnar structure is found in media rich in protein, the coarse columnar where the protein content is poor. During inflammation there is poured out from the gall-bladder walls an exudate rich in calcium and protein. When the inflammation regresses and the bile again enters, the stones are formed.

In the development of every pigment calcium or cholesterin stone there are three periods: (1) crystallization into rosettes; (2) agglutinations, with the accumulation of rosettes into a nucleus; (3) apposition, bringing about the formation of a cortex. This development is influenced by the condition of the bile—the more tenacious, the more rosettes. The first form of these has never been observed. There is probably a decomposition into a semifluid mass which, through condensation and crystallization, becomes the radial form and agglutinates. The time relation of these processes regulates the size. The apposition period takes place usually in a changed medium—new bile, becoming more normal, brings about a slower crystallization of continuous, thicker form. The greater admixture of exudate in the center (greater protein) accounts for the greater softness here. The colloids of the gall-stone nucleus go through an aging process, and since contraction cannot occur at the hard cortex it takes place from the center, and a cleft occurs. Water exuding from the nucleus may contain cholesterin, which may precipitate again as fine needles.

Barrel-shaped stones are found, showing two varieties of surface: (1) faceted, where it has been against another stone; (2) finely nodular, from contact with the mucous membranes. These are more or less immobile. Inflamed mucous membrane as well as bile, forms a factor in their origin. From masses of pus comes a protein which, with pigment or cholesterin from the bile forms the stone. The formed stone constitutes a nidus, and a strong precipitation center for future inflammation, hence no new stones are formed.

There is yet a third variety, or static stone, which is differentiated from the others by its origin only in the gall passages. They form a second variety of bilirubin calcium stone and are lamellated, irregularly oval or rounded. They are found most often around a foreign body, especially a gall-bladder stone. They are a combination stone of the second order, the factors in their formation being: (1) metabolic disturbance, (2) infection, (3) bile stasis. There is no single cause in gall-stone formation.

As to therapy—when there is infection, surgery (cholecystectomy) is the method to use. The formation of stones should be avoided, the metabolism regulated, infections prevented and rapid obesity cures guarded against. Irrigation of the bile passages should be secured. If conditions are unfavorable for operation, an attempt should be made to dissolve them by increasing the dioxycholate. There is danger, however, that during this procedure a cleft may form and the split fragments constitute new neuclei. The biliary passages should be protected from trauma and infection.

Mary A. Hipple, M.D., Reporter.

WARREN—MARCH-APRIL

The March meeting of the Warren County Medical Society was held on the 17th at the Elks' Club, with Dr. Condit as host, and 18 members in attendance.

The Society went on record as endorsing the One Board Bill, as opposing compulsory health insurance, as opposing interference with scientific research, and as favoring reduction of the narcotic tax.

Dr. Beaty gave a résumé of some newer ideas in diet and nutrition, and after the meeting a dinner was enjoyed.

The April meeting was held on the 21st, at the Elks' Club, with 18 members in attendance.

Dr. Fairbairn of Buffalo gave a talk on "Some Indications for Early Operation on the Mastoid." He said that, while acute mastoiditis appears to be less frequent in the hospitals, meningitis is still common enough, and he believes in some instances it is due to failure to recognize a mastoid affection early enough. Temperature increase in the presence of an acute otitis media means a possible mastoid. Persistence of suppuration for weeks after an acute trouble that cannot be clearly defined as tubal catarrh is an indication for operation on the mastoid. If the discharge changes to a bloody or grumous nature, it means bone destruction. A recurrent discharge after stoppage may indicate involvement of the mastoid. A dropping of the posterior wall, causing swelling of the periosteum during an acute process, if it occurs after the fifth day, is a sign of great importance. Pain in the temporal region, not to be explained by other symptoms and with an acute discharge, may mean a brain abscess. Pain alone, discharge alone, or x-ray cloudiness in itself, are often misleading. Several cases were cited in which brain abscess was found on exploration, where the mastoid was the beginning of the trouble. A case of cerebellar abscess was reported which recovered after thorough drainage.

Dr. Young, acting as host, provided a fine chicken dinner for the members present.

M. V. Ball, Reporter.

PENNSYLVANIA NEWS ITEMS

ERRATUM

The Journal was erroneously informed and the notice of the death of Dr. Isador K. Gardner, of Pittsburgh, which appeared in the May issue of the Journal, was not correct. The death of Dr. Gardner's brother, who was a dentist and resided at the same address, and the confusion of the postoffice as to the names, led to the error. We are pleased to state that Dr. Isador K. Gardner is alive and in good health.—Editor.

DEATHS

Dr. Thomas B. Williams, of Philadelphia, aged 76 years, died on April 15th. He was graduated from Jefferson Medical College of Philadelphia in 1887.

Dr. Katherine M. Cook, of New Wilmington, died May 1st. Dr. Cook was born in 1882 and was graduated from the University of Pittsburgh School of Medicine in 1907.

Mrs. Hubert Work, wife of Dr. Work, Secretary of the Interior of the United States, died suddenly on May 9th while riding in a motor car. Death was due to heart trouble.

Dr. George F. Souwers, of Philadelphia, who was graduated from the Jefferson Medical College of Philadelphia in 1877, died suddenly on April 21st of heart disease, aged 67 years.

Dr. Andrew J. Edmonds, of Bruin, aged 60 years, died of heart disease on April 1st, at Butler. He was a graduate of Jefferson Medical College of Philadelphia, class of 1887.

Dr. Albion A. Cross, of Pittsburgh, aged 36 years, died on March 30th of pneumonia. Dr. Cross was graduated from the University of Vermont College of Medicine, Burlington, in 1912.

Dr. Alvin St. Clair Daggette, of Pittsburgh, who was born in 1856, and was graduated from the Western Reserve University School of Medicine, Cleveland, Ohio, in 1881, died of pernicious anemia on May 13th.

Dr. John W. Millick, of Philadelphia, who was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1868, died on May 1st, following a long illness, aged 78 years.

Dr. Jerome Grant Pace, who was born in Laceyville in 1867, died at Sayre on March 19th. He was graduated from the Medico-Chirurgical College of Philadelphia in 1888, and has since practiced in Nebraska, Ohio and Colorado.

Dr. A. Alonzo Sargent, of Philadelphia, died on May 10th following a three weeks' illness. Dr. Sargent was born in 1872, and was graduated from Jefferson Medical College in 1893. He is survived by his wife, a son and a daughter.

Dr. Alice M. Hackley, of Philadelphia, who was graduated from the Woman's Medical College of Pennsylvania, Philadelphia, in 1893, and who was formerly on the staff of the Woman's Hospital, died on April 9th following a long illness, aged 55 years.

Dr. Thomas Matlack, of Philadelphia, who was a graduate of Hahnemann Medical College and Hospital of Philadelphia, class of 1901, died on April 15th, aged 49 years. During the World War he served in the M. C., U. S. Army, with the rank of captain.

Dr. John Adam Capp, of Lancaster, died recently following an illness of five months. Dr. Capp was a native of Jonestown (Lebanon County) and was in his seventy-fifth year at the time of his death. He was a graduate of the University of Pennsylvania School of Medicine, class of 1878.

The interment of Lieutenant Reese Davies, M. C., U. S. A., took place at Forest City, on Sunday, April 6th. Lieutenant Davies was killed in September, 1918, having been attached to the crack regiment of Irish Guards of which Rudyard Kipling's son was also a member. Kipling lost his own son in that regiment, and in his History of the Irish Guards he mentions the death of the young American doctor, Reese Davies.

Dr. Elwood B. Haworth, of Pittsburgh, who was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1883, died of cerebral hemorrhage on April 24th, aged 61 years. Dr. Haworth was a past president of the Allegheny County Medical Society, and was for forty-one years on the staff of the Western Pennsylvania Hospital.

Dr. Ernest Laplace, one of the foremost figures in American medical circles, died at his home in Philadelphia on May 15th from a heart attack with which he had been suffering for a week. He was 62 years old. Dr. Laplace was born in New Orleans. He was educated at Georgetown University and held degrees of bachelor of arts, master of arts, doctor of laws and doctor of medicine from various universities in this country and Europe. He served in Europe under some of the greatest scientists of the nineteenth century, including Pasteur, Lister, Koch, Savary and Billroth. He had been honored not only by this country, but also by France, as well as by several popes. He was a lieutenant-colonel in the Medical Reserve Corps. He is survived by his wife, a son, who is a student at Georgetown University, and his nephew, Dr. Basil Beltran, of Philadelphia.

ENGAGEMENTS AND MARRIAGES

The marriage of Dr. S. G. Pontius and Miss Helen Hohman, of Lancaster, took place on April 5th.

Dr. Aldrich Robert Burton and Miss Rita Dix, both of Philadelphia, were united in marriage on April 26th.

Miss Florence Fisch, of Minneapolis, became the bride of Dr. Walter H. Fink, of Philadelphia, in February.

Dr. Harry Sands Weaver and Miss Theodosia Ruth Hartley, both of Philadelphia, were married on March 12th.

Dr. James H. Burrows, of Williamsport, and Miss Sarah H. Kaye, of Emporium, who were recently married, have returned from their wedding trip.

The wedding of Miss Mary Louise Kunkle, daughter of Dr. and Mrs. Wesley F. Kunkle, and William Lester Bower, all of Williamsport, took place on April 17th.

Dr. and Mrs. Joseph J. Burke, of Philadelphia, recently announced the engagement of their daughter, Miss Regina Marie Burke, to Mr. John A. Sturgis, also of Philadelphia.

An attractive wedding of social interest took place on May 10th when Miss Elizabeth C. Dercum, daughter of Dr. and Mrs. Francis X. Dercum, of Philadelphia, was married to Mr. Samuel Wright Mifflin, also of that city.

Miss Victoria Chaapel, daughter of the late Dr. Victor P. Chaapel and Mrs. Chaapel, of Williamsport, was married to Thomas S. Clark, also of that city, on Easter Monday at the home of the bride. Both the bride and groom are attending Columbia University.

ITEMS

Dr. and Mrs. I. E. Sloan, of Johnstown, have returned home after a three months' stay in California.

Dr. and Mrs. W. Minster Kunkel, of Harrisburg, have announced the birth of a son, William Minster Kunkel, Jr., May 19th.

Dr. John Hedges, of Philadelphia, is in the Germantown Hospital recovering from a general physical breakdown.

Dr. C. B. Millhoff, of Johnstown, is gradually improving following a siege of one month with multiple neuritis.

Dr. Annie Freese, of the Allentown State Hospital, has resigned to accept a position at the General Hospital, Passaic, N. J.

Dr. R. B. Watson, of Lock Haven, was recently tendered a testimonial dinner by the Clinton County Medical Society on the occasion of his eighty-sixth birthday anniversary.

Dr. Charles J. Hatfield, of Philadelphia, was recently elected president of the National Tuberculosis Association at the organization's annual convention held in Atlanta, Georgia.

Drs. B. E. Longwell and R. C. Davis, of Johnstown, have left for a three weeks' visit in Texas, New Mexico and Colorado. They expect to spend some time at the Mayo Clinic on their way home.

Dr. and Mrs. J. B. Lowman, of Johnstown, have returned home after spending the winter in Miami, Florida. Dr. Lowman has resumed his practice and has fully recovered from his accident of last October in Pittsburgh.

Dr. P. R. Cleaver, of Johnstown, has returned to his home from the Mercy Hospital, where he was a patient for several months. Dr. Cleaver suffered from a fracture of the thigh received in an automobile accident.

The Seventy-Fifth Anniversary of the founding of The Philadelphia County Medical Society was celebrated on the evening of May 7th in the ballroom of the Bellevue-Stratford Hotel. A program of much interest and historic value followed the banquet.

At a meeting of the Clearfield County Medical Society on May 9th Dr. John M. Quigley, of Clearfield, was presented with a fine watch by the members of the Society in appreciation of his eleven years of service as Secretary of the Society.

Dr. George G. Harman, of Huntingdon, a former trustee and councilor of the State Society, was presented with a handsome traveling bag on the occasion of his seventieth birthday, which occurred May 16th. The gift was presented to Dr. Harman by the members of the Huntingdon County Medical Society at a meeting of the Society.

GENERAL NEWS ITEMS

The Twenty-Fifth Annual Meeting of the American Therapeutic Society was held at Toronto, Canada, on June 6 and 7, 1924.

Thh American Physiotherapy Association will hold its third annual convention at the Drake Hotel in Chicago, June 10 and 11, 1924. Anyone interested is cordially invited to attend.

Fifty physicians recently paid tribute to Dr. Willard Springer, of Wilmington, Del., at a testimonial dinner at the Hotel Du Pont on the occasion of his fiftieth anniversary as a practicing physician.

The office of the State Society is in receipt of the first issue of a new publication, *The American Journal of Physical Therapy*. This new Journal is to be devoted to the various branches of Physical Therapy, with contributions and clinical material from authorities in its line. Its advertising pages will conform with the standards of the American Medical Council.

Thoms S. Blair, M.D., formerly of Harrisburg, Pa., and now of Santa Ana, California, for years editor of the *Medical Council*, of Philadelphia, and latterly an editorial writer for its successor, the *American Physician*, has severed his connection with the latter publication because he is not in accord with policies recently inaugurated by the management. Dr. Blair was formerly a member of the Medical Society of the State of Pennsylvania, and resigned as Chief of the Bureau of Drug Control of the State Health Department about a year ago, before removing to Santa Ana, where he is now in practice.

Preliminary announcement of a prize essay competition on the vitally important subject, "The Interrelationships of Hospital and Community," is made by

The Modern Hospital Publishing Co., Inc., in the June issues of *The Modern Hospital* and *The Nation's Health.*

Three cash prizes of $350, $150 and $100 will be awarded, and there will be such honorable mentions as may be authorized by the Committee of Awards.

The purpose of this competition is to concentrate the thought of hospital, public health, medical and social welfare workers on this timely subject for the purpose of crystallizing opinions and defining future objectives.

The general program for the competition may be obtained on and after June first from The Modern Hospital Publishing Co., Inc., 22 East Ontario Street, Chicago, Ill.

TESTIMONIAL BANQUET TO DR. GEORGE H. SIMMONS

In recognition of the long and valuable service to scientific medicine of Dr. George H. Simmons, for twenty-five years Editor of *The Journal of the American Medical Association,* a committee of physicians arranged for the painting of his portrait and a testimonial presentation dinner was held in the Congress Hotel, Chicago, Monday evening, June 9th, at 6:30 o'clock. Special invitations were issued to officers of leading medical organizations.

LO, THE POOR CHIROPRACTOR

A wail from Davenport, out where the West begins: B. J. Palmer, the well-known head of the "fountainhead of chiropractic," is frankly worried. And all on account of some chiropractors being sued for malpractice or sent to Sing Sing for manslaughter or some little thing like that. Thus, Mr. Palmer in a recent circular letter sent to the faithful:

"It seems that word has gone out from A. M. A. headquarters to use the charge of manslaughter and malpractice and suits are coming thick and fast from every point of the compass."

The obsession that the American Medical Association is in any way related to these prosecutions is funny or pathetic, according to the point of view. In common with the quacks, the "patent medicine" makers and others who dabble in pseudoscience, Mr. Palmer dresses the American Medical Association in horrific habiliments. He endows this organization with all the legislative, executive and judicial powers of an Eastern potentate, and would have the public believe that it is a fire-breathing ogre stalking the length and breadth of the land seeking what it may devour. B. J. Palmer's latest thesis is that every successful case of malpractice against a chiropractor tends to discredit chiropractic in the eyes of the public; therefore, it behooves the Amalgamated Order of Spine-Pushers to have on tap the best legal defense possible. This may be obtained by joining the Universal Chiropractors Association—B. J. Palmer, Secretary; application fee, $10; dues and assessments, extra. Mr. Palmer conceives that if every present member of the Universal Chiropractors Association will try to get nonmembers into that organization, it will help greatly. This seems plausible! As he puts it, the faithful should try to get "these boys who are outside the fold to come in, until the storm is over at least" because, as he views it, "the situation is desperate." One gets the impression from Mr. Palmer's letter that charges of manslaughter and malpractice against chiropractors are so easily proved in court that it is well-nigh hopeless for the chiropractic defendant to employ a local attorney, as such cases are things with which a local lawyer "finds himself unable to cope." Indeed, he says, the national counsel of the Universal Chiropractors Association, "expert as they are in this line, are often unable to win the decision." All of which must make very sad reading to the followers of this cult. There is a silver lining to the cloud. Evidently there begins to dawn on the consciousness of a gullible public a suspicion that impingement of spinal nerves by subluxated vertebræ is not really responsible for smallpox, syphilis, soft corns and barbers' itch. As this skepticism waxes, chiropractic will wane.—*Jour. A. M. A.,* May 17, 1924.

WHAT DO COLLEGE GRADUATES KNOW ABOUT HEALTH?

College graduates from widely scattered institutions of higher learning show in surprising numbers and astounding measure ignorance of the most essential laws of health and their practical application according to Dr. Thomas W. Wood in the February issue of *Hygeia.* It would naturally be expected that the advantage of a college training would result in intelligent dependence on hygiene, in freedom from general, common forms of ignorance, errors and superstitions relating to health and disease. Unfortunately statistics are not available to provide accurate figures on the subject, but Dr. Wood asserts that "Close contact for twenty-five years with students and teachers from many colleges, with a coincident general knowledge of the world during this period, leads one interested observer to the conclusion that college graduates, for the most part, are sadly lacking in the higher knowledge and wisdom regarding matters of health and living, which their superior education might be expected to provide." The answer to this condition lies in a broader and more systematic instruction in the principles and practice of hygiene. The colleges and normal schools are the logical place in which to start such training, the effects of which would travel far through the nation, since approximately one per cent of young American men and women go to and through college.

A BLOOD PRESSURE PARADOX

Albert H. Miller, Providence, R. I. (*Journal A. M. A.,* May 10, 1924), reports the case of an apparently healthy young man who had a normal blood pressure, but no diastolic pressure. The diastolic pressure, taken by an approved ausculatory method, registered zero. It is pointed out that in certain blood pressure examinations, the fourth phase may extend down the scale to zero, resulting in the entire absence of the fifth phase. In these cases, observers who note the diastolic pressure at the fifth phase find the diastolic pressure at zero and are mystified by the occurrence of the blood pressure paradox. The diastolic pressure should be noted at the beginning of the fourth rather than the fifth phase. The blood pressure paradox occurs with hyperthyroidism, aortic heart lesions, fracture of the skull, and during general anesthesia. It may be continuous or may occur intermittently. The occurrence of the blood pressure paradox does not seem to influence recovery.

DUODENAL ULCER

Victor Knapp, New York (*Journal A. M. A.,* May 17, 1924), asserts a niche and incisura visualized in the first portion of the duodenum is absolute proof of the presence of duodenal ulcer. The significance of this roentgen-ray sign of ulcer of the duodenum has received ample recognition abroad, while here in America it has been studied but little, with perhaps insufficient emphasis on its importance. Knapp cites one case in support of this contention.

THE

MEDICAL SOCIETY OF DELAWARE

ORIGINAL ARTICLE

PYLOROSPASM AND PYLORIC STENOSIS*

CHARLES E. WAGNER, M.D.

WILMINGTON, DEL.

Pylorospasm consists of a spasm of the pyloric muscle, while pyloric stenosis consists of a hypertrophy of the circular muscle fibers of the pylorus. A differential diagnosis between the clinical appearance of the two conditions is often impossible to make. Pylorospasm is commonly seen in children of neurotic families and the symptoms resemble those of true pyloric stenosis, but are not as marked. The baby is usually irritable and easily frightened. Vomiting is more intermittent than in pyloric stenosis and constipation is not as marked. Gastric peristalsis is frequently seen in pylorospasm, but usually does not go beyond the midline. Loss of weight is not as marked as in true pyloric stenosis. I might add that I once saw a case, giving most of the cardinal symptoms of complete pyloric obstruction, while associated with Dr. Schroder, of Duluth. The case came to operation and was found to be a congenital atresia of the duodenum. Such cases, however, are extremely rare.

The symptoms and signs of pyloric stenosis are: (1) persistent projectile vomiting; (2) progressive loss of weight; (3) constipation; (4) visible gastric peristalsis; (5) palpable tumor. The obstruction may be complete or partial, the symptoms depending upon the extent of the obstruction. The baby is apparently healthy at birth, does well for ten days or two weeks, and then begins to vomit without apparent cause. The vomiting rarely begins before the end of the first week or later than the sixth week. It soon becomes projectile in type, and the vomitus is ejected for a distance of several feet. The vomiting may occur at any time in relation to feedings, but usually occurs immediately after feeding.

The loss of weight is progressive and may be very rapid. Constipation is the rule. The stools in a typical case may contain nothing except green mucus, which is characteristic of a starvation stool.

Visible gastric peristalsis is present in almost all cases. The baby should be stripped and watched after feeding. The waves of gastric peristalsis can be seen beginning at the left costal margin and progressing downward and to the right across the abdomen. When one wave has disappeared another can be seen making its appearance. The waves should not be considered as diagnostic of true stenosis unless they cross the midline.

When the case is advanced, a tumor about the size of a marble or hickory nut can be felt through the abdominal wall on the right side a little above the level of the umbilicus. My experience has been that unless the case is well advanced and there is marked loss of weight, it is very difficult to palpate the tumor. When it is felt it is very strong evidence of a stenosis. It may be felt, however, in pylorospasm at a time when there is a spasm of the muscle but very little obstruction.

The roentgen ray is often of considerable aid in determining the amount of obstruction. The infant is given a gavage of about two ounces of a weak milk modification to which a teaspoonful of bismuth subcarbonate has been added. A series of films taken at one-half hour, one hour, two hours and four hours, on a normal child will show that the stomach is nearly emptied in four hours. With partial obstruction, half or more than half of the bismuth will have left the stomach, while in marked obstruction most of it is still retained in the stomach at the end of four hours.

The treatment of cases of true pyloric stenosis with marked obstruction is surgical. As soon as the diagnosis is made, the Fredet-Rammstedt operation should be performed. This consists of splitting the hypertrophied circular muscle fibers of the pylorus down to the mucous membrane. Prior to operation the stomach should be emptied by lavage. Feeding is begun a few hours after the baby comes out of ether. Breast milk should be given, if possible, but if not obtainable, whey is best given and later weak milk modifications.

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*Read before the Medical Society of Delaware, Middletown, Del., October 9, 1923.

The prognosis is usually good, but this depends largely upon the condition of the child prior to operation. Early diagnosis is very important, and for this reason the possibility of pyloric stenosis should always be considered in a case of persistent vomiting, progressive loss of weight and constipation in early infancy. If we are certain of our diagnosis we should not compromise with medical treatment but should turn the case over to a surgeon and give him the best possible chance of obtaining a recovery.

Treatment of cases of pylorospasm or pyloric stenosis with comparatively slight obstruction is largely a matter of feeding. The thick cereal feeding, first advocated by Sauer, is the most successful method. His original formula was as follows: Skimmed milk 9 oz.; water 12 oz.; farina 6 tablespoonfuls; dextri-maltose 3 tablespoonfuls. This is boiled one hour in a covered double boiler. From two to eight tablespoonfuls, according to the size of the baby, are given every three hours. Since Sauer's original paper, it has been found that somewhat thinner mixtures work better and the amount of farina now employed is one tablespoonful to five ounces of liquid. The mixture is so thick that it ordinarily cannot be taken from a bottle. As Dr. Griffith suggests, it may be given with a large-holed Hygeia nipple by pushing it through with a spoon while the nipple is in the baby's mouth. The object is to give a thick mixture which is vomited with difficulty. Owing to the danger of starch indigestion the stools should be examined for undigested starch. Water should be given between feedings. It may be necessary at times to give an intraperitoneal injection of salt solution.

Stomach washing with a warm one per cent solution of sodium bicarbonate may be of value. The stomach washing is best done about one-half hour before feeding, once or twice a day. It disturbs the baby a great deal, however, and there is always the danger of causing an aspiration pneumonia.

The only drug of value is atropin, the proper use of which was first advocated by Dr. Haas, of New York City, in 1918. Previous to that time atropin or belladonna had been used but never in the dosage recommended by him. He found that an infant tolerates rather large doses. Brilliant results have been obtained with it by many men, while others have seen no advantage coming from its use. A 1 to 1,000 solution of atropin sulphate is employed. The prescription I use is: Atropin sulphate, ½ grain; glycerin, 1 dram, to the ounce of water. The directions are to give one, two or more drops, as the case may indicate, in a teaspoonful of water, twenty minutes before each nursing or feeding. The glycerin is added to prevent decomposition of the atropin. The patient should be carefully watched and the dosage increased until the vomiting ceases. As much as ten drops before each nursing or feeding may be necessary. It is my custom to employ it routinely in all cases of pylorospasm or stenosis. The toxic symptoms are flushing of the skin and marked dilatation of the pupils. Occasionally an infant is sensitive even to minute doses, and in such cases it cannot be employed. It may be necessary to continue the treatment for five or six weeks, gradually decreasing the dose. I am fully convinced of its therapeutic value, no matter whether breast milk, cow's milk formula, or thick cereal feeding is the type employed.

Cases of pylorospasm usually recover under proper management. A great many cases of mild pyloric stenosis also recover under medical treatment. Prevention of dehydration is usually a difficult problem and often necessitates the intraperitoneal administration of normal salt solution. We should always remember, however, if we have not made any progress, or on the contrary, have lost ground over a period of ten days or two weeks, that the case is one for surgical treatment. In skilled hands the operation has a low mortality and the results are among the most brilliant on record.

EDITORIAL

THE FUNCTIONS OF A MODERN HOSPITAL

As one contemplates the erection of a new hospital or a "drive" or "benefit" for the maintenance of those already in existence, the thought presents itself: What are the purposes a hospital serves?

In times gone by the hospital was primarily an institution for the care of the poor. The well-to-do and the rich received medical and surgical attention at their homes. With the development of surgery on the one hand, and the complex requirements of modern nursing care on the other, the home can no longer provide sick-room facilities, and as a result private rooms for the well-to-do, with accommodations rivaling, in many cases, the best appointed hotels, are constituting the major portion of the hospital, while the wards for the poor have become insignificant, both in the number of beds and the attention paid to them. The income from the private floors is needed for maintenance, since neither the meager appropriations nor private charity are sufficient to meet the expenses of a modern hospital. As a natural result, the hospitalization of the poor finds little encouragement. The modern hospital serves the community by providing facilities for the proper treatment of a different class of patients, and inasmuch as not only the revenue but the donations come largely from the middle and upper classes of society, the situation is not abnormal.

The physicians are directly benefited by this change in the character of the hospital. Whereas, in the past, the members of the staff gave their time to the hospital as a free contribution to a purely charitable institution, at present the doctors use the hospital as a necessary equipment in their practice. Their living, in a large measure, depends on the hospital. This is particularly true of the surgeon.

The hospital has another vital function to perform, and that is to enrich medical science by the observations carried on in the institution by men equipped to try out newer methods of diagnosis and treatment on a scale that is impossible in private practice. Were it not for the hospital, no progress in medicine would have been possible. It is the proving station, and the research laboratory of scientific medicine. The wealth and variety of material, the organization, the special equipment, all make it possible to study disease as it cannot be studied in private practice. Any hospital that fails in this most vital function pays for its failure by being cast into obscurity.

When a hospital in a community, large or small, has only a local reputation; when it is known only by the patients who have been treated; when it appeals to the local profession on the commercial side only; when, in short, it is merely a well-equipped nursing home, it is a sure sign that the management and the staff have failed to develop the scientific side of the institution.

The true yardstick by which the efficiency of a hospital should be measured is not the number of operations or the attendance on clinics, but the number of cases that have been carefully studied and the contributions to medicine which the staff has made. A. R.

LITTLE JOURNEYS IN GENERAL PRACTICE

BY A GENERAL PRACTITIONER

HARD ROADS AND PLEASANT

It has been said by some very learned man in the past (when a three-year course at college was the standard in medical education) that the "three years of medical learning comprised first, envy; second, selfishness; and third, egotism." I presume that he himself was a doctor and had run up against the same types of men that all of us meet in our profession to-day. Were it not for the great envy, the spiteful selfishness, and the colossal egotism of so many of our fellow physicians, what a happy, helpful and honorable calling ours would be!

In my Little Journeys I have tried to show up, to ourselves, many of our little shortcomings and failings, and I fear that some of my readers are "mad clean through," while others, equally as guilty of mistakes, have neglected to see themselves in any of the professional characters I have tried to draw. Indeed, one of my fellow practitioners hardly speaks to me, evidently suspecting that I am the person who described his "failings" in one of my journeys; while another doctor, not far distant, laughed heartily while telling me about a man I attempted to describe, not knowing that he, himself, was the person I had in mind when scribbling some of my Little Journeys.

I wish to say that all of the roads in life's medical highway are not hard nor rough ones. Some are smooth and even and filled with the scent of happy flowers and shaded by the beautiful trees and shrubbery of good fellowship, trust and the kindest of feelings.

I know of several towns in our little state where two or three doctors live and work and chum together—where hard feelings and distrust are unknown amongst them. Here is a pretty pasture, where the professional spirit is at rest, where envy and selfishness and egotism find no place. I have only within a few hours returned from a town on our county boundary, where the doctors, almost to a man treat each other like fraternity brothers—where, if Dr. B. is very busy, Dr. L. congratulates him, and where, when Dr. P. needs professional help, he can call upon any of his fellow doctors for aid without questioning their ability or suspecting their motives—where any one of the men can take a vacation and leave his practice to *any* or *all* of his competitors, knowing that when he comes back they will return his regular patients to him. This town is like a beautiful, peaceful valley on our Little Journeys, where the clear, *clean* little river of friendship winds amongst the green, fern-studded banks of trust and fair-mindedness. Success to one of these men means success for the entire profession. If there is egotism, it is hidden by the honest ethics of medical practice. If there is envy, it never shows itself. And as strange as it may seem, nearly *all* of these men are busy and excellent physicians!

I honestly feel that the State of Delaware is to be congratulated upon having such a competent and thoroughly equipped set of medical men as comprise the profession within its borders. There are many names in the medical directory more famous and noted and respected in other parts of our great country than can be found in the little Diamond State. Such medical centers as Baltimore, Chicago, Philadelphia and New York hold men of medicine far better known than any within the borders of our little state, but no state in the Union can boast of a higher standard of medical men, nor of a better general all-round set of doctors than can be found in Delaware. Quacks and crooks are very, very few amongst us here, and while I may have seemed to "knock" some of our profession in my Little Journeys I did not do so with any feeling of resentment; I did so in a spirit of helpfulness, like holding up a mirror before a pretty girl to show her that she displaced one eyebrow, or rouged her lips too much on one side, and therefore, if any doctor, who has read my poor little papers, feels affronted because I inadvertently "hit" him, he must know that it is usually the *truth* that hurts, and I want to assure him that, in my little articles I had no sign nor idea of either envy, selfishness nor egotism.

MISCELLANEOUS

A NEW CURE FOR TUBERCULOSIS

The following letter from a miner in Arizona was received by Mr. Irenee DuPont, president of the DuPont Powder Company. As the method of administration of the new cure for consumption is rather unique, we pass it on to the profession, with a hint as to the possible application of the method to obstreperous and ungrateful patients.

Tombstone, Ariz., Mar. 19, 1924.

Mr. Irenee Du. Pont,
St. Louis, Mo.

Dear Sir,

In a article (written by you) in the *Literary Digest* for November 3rd, 1923, you planeley show Chemistry's tremendous tomorrow. In reading your article I note you mention the fact that someday, Chemistry will discover a cure for all disease. I am not a Chemist and know but little about the elements But I have some information to offer to someone who does give there time to such work, and I am going to tell you of a plant I discovered in Honduras, C. A. While placer mining on a river (washing gold) in the jungle of eastern Honduras I lived near an Indian village. one day I noticed one Indian whipping a young man with a wide leaf nettle. The young man gave such screams it anoyed me and as I thought the thorney nettle to be very poison I interfeared. The older Indian told me he was doctering the man for consumption. the man being whipped with the Broad leaf nettle (as I would call it) was very near all in, had a heavy deep sounding cough, so I desided to watch the care the Indians gave him a treatment as I above discribed once every two weeks. In two months he was strong and healty in apearince and I beleve cured of the dreaded disease, so I disided to someday let medical since know of this leaf or nettle, and as you spoke of being in the field of Chemistry I thought maybe my knologe might help you to one more step to further since. My experiance with the nettle was one day I carlesly walked into a cluster of them the leaves touched one side of my face and my right hand. The sting was worse that that of a Bee and as they have a hundred points on each leaf, I suffered so I lay down for a while. the pain was so strong I could not stand it longer so I ran to a creek and plunged into the watter. But with no more releaf than when they were dry. in twenty minuts my hand and one side of my face was a mass of red pimples the next morning the pimples contained a yellow pus and in three or four days they had all broke and I was quite natural again. Hoping that this may be of benifit to you and the Chemistry World I

Remain Yours Very truly
Samuel Eastland.

A CONVICTION OF GREAT IMPORTANCE

The following editorial appeared in the New York *Times,* April 10th. The *Times* is to be congratulated upon its sane and outspoken attitude concerning chiropractic:

Ernest G. H. Meyer, one of the too many men who, without a medical education, have engaged in the practice of medicine, was convicted of manslaughter in a Brooklyn court this week and may receive a maximum sentence of from ten to twenty years in jail. As the jury recommended clemency, it is not likely that his punishment will be severe, but the conviction will stand as a precedent and shows that convictions can be obtained in spite of that absence of intention to do harm which always counts so heavily with jurors—and with judges, too, for that matter.

Meyer, who calls himself a "chiropractor," was summoned by misguided parents to treat a sick child. He performed some of the spinal manipulations which constitute the whole stock in trade of his class. Whatever the result of his exertions may have been, he did not discover that the child was suffering from diphtheria, a disease which almost any sane adult ought at least to suspect before it is far advanced, and a real doctor was not called in until just before the fatal termination. Then there was administered the antitoxin which in all probability would have saved the child's life if resort to it had been timely, but it was too late and the little girl died, a victim of a double ignorance. This to the jurors was manslaughter.

One comment on the verdict heard in the courtroom was that if it is to stand any "chiropractor" unlucky enough to lose a patient can be sent to jail. The statement will excite neither dissatisfaction nor apprehension among people fairly well informed as to the preparation necessary for the practice of medicine and who have sense enough to know that there is more in it than surgery and the giving of drugs, to which all the "irregulars"—euphemism for "quacks"—desperately try to confine its definition.

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ORIGINAL ARTICLES

SYMPOSIUM ON PELVIC SURGERY

A FEW PRACTICAL POINTS IN PELVIC SURGERY*

THOMAS S. CULLEN, M.B.†
BALTIMORE, MD.

Every surgeon is from time to time suddenly confronted with some difficult problem—one that he has never met before, and one that must be solved then and there. As the years roll by he becomes familiar with most of the difficulties so that he rarely encounters a case that completely baffles him.

Small keys often unlock large doors. Some quite simple procedure may frequently change an apparently inoperable case into a relatively easy one.

My paper of to-day is intended in the main for the younger surgeon, but I hope that here and there it may contain a point of some value even to the war horse of many battles.

On January 2, 1892, after several months in pathology under the guidance of Dr. William H. Welch and Dr. William T. Councilman, I became the junior member of the intern staff of the Hopkins under Dr. Howard A. Kelly. A year later I took charge of gynecological pathology in our department, and during the succeeding three years spent all my time in the laboratory. In the fall of 1896 I returned to the operating room as resident gynecologist. A few days later I assisted Dr. Kelly when he was doing a supravaginal hysterectomy for myoma and he left me to close the abdominal wound. After the abdominal dressings had been applied, it was noted that the patient was bleeding from the vagina and in a few moments she was pulseless, although still breathing.

I reopened the abdomen at once and found everything in excellent condition. I then opened the cervical stump and found an unusual branch of the uterine pumping away and the blood escaping through the cervical canal. The patient was pulseless at the wrist for hours and she remained in the room adjoining the operating room for two days. So near death was she that wherever a hypodermic was given a slough developed later.

Next day Dr. Kelly came over and said, "Tell me all about the case;" and I did. He replied, "Cullen, this is the worst case you will ever have, go ahead and do any operation you want to." The patient promptly recovered. This is my introduction into abdominal surgery.

Shortly after this, a young girl fell on a picket fence, one of the pickets piercing the labium and producing profuse hemorrhage. One of my colleagues closed the wound with catgut, but, unfortunately some foreign matter had evidently been carried in by the picket. The wound broke down, and the girl had an alarming secondary hemorrhage. Next time the wound was brought together with silk. It is perfectly evident that, where infection cannot be completely ruled out, we should not rely entirely on catgut but should also put in some nonabsorbable suture, such as silk or silkworm gut.

One afternoon I was called hurriedly to Hagerstown to see a patient with Dr. J. McPherson Scott. This lady, while up on a ladder hanging curtains, had slipped and had come down straddling the back of a chair. An alarming hemorrhage had at once followed. When I saw her, the bleeding had stopped, but she was almost exsanguinated. I made no examination, but sent her at once to the local hospital and had preparations made both for a perineal and an abdominal operation. When she was asleep I examined and found a small brown, slightly prominent area, about 6 mm. in diameter, on the right labium. This I gently squeezed. It was a clot. As soon as it was dislodged copious bleeding followed from the labial veins, but this was easily controlled and the wound was closed. It was hard to believe that the patient had lost so much blood from such a small point and we could not positively rule out a ruptured extra-uterine pregnancy. Had she been in Baltimore I would have taken a chance and watched for developments, but as I should have been many miles away in a few hours it was essential that this point be cleared up at once. She was too weak to be submitted to an abdominal operation unless this was absolutely necessary. I grasped the posterior lip of the cervix, pulled it strongly forward, made a small transverse incision about 1 cm. long just behind it, entered Douglas' culdesac and found that it contained no blood. The opening was closed with two catgut sutures. The patient had no further trouble.

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*Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 3, 1923.

†Professor of Clinical Gynecology, Johns Hopkins University. Visiting Gynecologist to the Johns Hopkins Hospital.

A small vaginal section will often clear up the diagnosis and render an abdominal operation unnecessary. Where the exploration shows that an abdominal operation is required, the opening into the vault can be used as the point of exit for vaginal drainage of the pelvis. In such cases I have often put a small drain up through the vaginal vault, and when the abdominal operation was completed another was introduced from above and sutured with one catgut strand to the first that had been temporarily laid in the pelvis prior to the opening of the abdomen. The lower section is then pulled down and out, thus bringing the permanent drain into its proper place. The catgut suture joining the two drains may then be cut.

About twenty years ago I repaired the perineum of a rather anemic woman. The wound healed perfectly and all the stitches had been removed. On the fifteenth day she had a rather constipated stool which ripped the perineum wide open, and an almost fatal hemorrhage followed. There was not the slightest evidence of infection. The perineum was again sutured and she made a prompt recovery. Had this operation been done in a private home the patient would surely have succumbed before the surgeon had had time to arrange for the second operation. The anemic condition was undoubtedly responsible for the defective healing.

Carcinoma of the labium offers a very poor prognosis even where we make a carefully blocked dissection of the inguinal glands, removing them and the growth in one piece. When cutting around the growth I give it a wide margin, and invariably use an electric cautery knife to free it in its entirety. After this the burnt area is cut away with an ordinary knife and the edges of the wound are approximated. At best, however, this operation offers but little hope.

Repair of the cervix or amputation of the cervix is not done so frequently as in years past, but these operations are now and then required. One never knows when the cervix may be infected and in some cases it is unusually dense and resilient. Every now and then a hemorrhage will take place a week or ten days after operation. This is invariably due to the too speedy absorption of the catgut. In such cases one is tempted to temporize, letting the patient alone or packing. Mere packing, however, is a most dangerous procedure. The catgut is already giving way or has yielded completely. The pack only tends to open the cervical wound still more. Whenever you have a hemorrhage after a cervical operation, take the patient to the operating room forthwith and put in fresh sutures while she is in good condition. It is the only way to play safe. You will invariably have to do it in the end.

A few years ago the late Dr. Henry P. Fahrney sent me a patient with a myomatous uterus. She gave a vague history of a recent miscarriage. We did a supravaginal hysterectomy and found a small piece of placenta in the uterine cavity just above the cervix. The cervix itself was rather friable, but we were able to close the cervical stump snugly. Fearing that there might be some infection in the cervix I placed a small drain in Douglas' culdesac, and brought it out through the lower end of the abdominal incision. Five hours later the patient had a rather severe hemorrhage from the vagina and was promptly brought to the operating room. On careful examination of the abdominal drain, I found that it was not in any way stained so I knew that the bleeding was coming from the cervical canal below the suture line. Consequently I closed the external os snugly with two mattress sutures of catgut. There was no further trouble. The house staff felt sure that I would open the abdomen and check the oozing from above, a much more formidable procedure, but the dry and unstained abdominal drain gave me the clue as to the easier and better operative measure.

On June 20, 1903, I did a hysterectomy on a patient of the late Dr. Haffner of Frederick, Md. This woman had a very persistent foul vaginal discharge and a myomatous uterus that filled the pelvis. Shortly after operation her temperature rose and by the tenth day it was 103° F. There was an area of induration in the vaginal vault just to the left of the cervix. I made a small incision directly behind the cervix and introduced a blunt Goodell dilator into the mass. A small quantity of bloody fluid and pus escaped. A few hours later active vaginal bleeding was noted and her pulse was 140. She was at once removed to the operating room. The bleeding was coming from a point just where the left uterine vessels should be. It was impossible to go in from above and check the bleeding, because the broad ligament was markedly indurated. It was too dangerous to attempt to clamp any vessels from below on account of their proximity to the ureter, and a pack introduced was forced out by fresh blood in less than two minutes. After a few moments of deliberation I wiped out the blood quickly, packed the cavity full and sutured the gauze *in situ* by placing catgut through the vaginal mucosa, through the gauze, and then through the vaginal mucosa below the opening. The bleeding was promptly checked and no further hemorrhage followed. The patient developed abscesses in the buttocks and arms, but finally made a perfect recovery. This simple procedure yielded better results than any formidable operation would have accomplished.

Before leaving the subject of uterine hemorrhage I want especially to draw your attention to hyperplasia of the endometrium, a condition to which I first referred in 1900, in my book on cancer. This condition—probably the most common cause of profuse uterine hemorrhage—is usually noted in the child-bearing period, but may occur in young girls. The periods are usually long and very profuse, but there is no discharge between them.

When such a patient is curetted a very large amount of mucosa is obtained. The surface epithelium is intact; some of the glands are large and have thickened epithelium, others are small. The stroma cells between the glands are very abundant and often contain nuclear figures. Frequently, large venous sinuses are found in the stroma and now and then the mucosa tends to form polypi. I have seen a girl of sixteen lose so much blood at her periods that her hemoglobin dropped to 30%. As a rule, this condition is easily differentiated from cancer by the absence of intermenstrual bleeding.

Curettage relieves the patient for three or four months, and then the bleeding recurs. Complete relief may be afforded by radium or by supravaginal hysterectomy. In young individuals, however, frequent curettage over a period of a few years may bring about a complete recovery. I have discussed this condition at length elsewhere.[1] It is a perfectly clear-cut clinical and pathological entity and is easily recognizable.

Ovarian cysts now rarely reach the size noted twenty-five or thirty years ago, because at the present time they are recognized early and promptly removed. Every now and then, even to-day, the cyst is found to be densely adherent to one or more intestinal loops, or to the peritoneum of Douglas' culdesac.

If we are dealing with a multilocular cystadenoma of the ovary we know, from our laboratory studies, that the outer layers of these cysts are laminated, and further, that these outer layers consist of connective tissue and do not contain gland elements. This knowledge can be turned to excellent account. At the margin of the area where the intestine is adherent, make an incision about one-fourth to one-half a millimeter deep into the cyst wall, and with the knife handle peel off the outer cyst wall at this point, leaving it adherent to the intestine. This is much better than lacerating the intestine over a considerable area and then having to suture it, which possibly may cause a marked narrowing of the lumen. If the tissues are very vascular, remove a much larger area of the cyst wall and leave it attached to the bowel. The raw area can then be folded on itself and sutured—raw surface to raw surface. A rather clumsy looking picture may result, but the surface that is left is smooth, and the bowel lumen has not been narrowed at all.

Where the cyst is so firmly fixed in the pelvis that it cannot be budged, a shallow incision can be made all around it at the pelvic brim and the cyst shelled out, leaving just a thin outer shell firmly adherent to the pelvic wall. A Mikulicz pad laid in the pelvis will usually check any oozing from this in a few moments.

The same procedure may occasionally be tried with dermoid cysts, but here the laminated structure is not so well marked, and, besides, these cysts show a peculiar tendency to become infected. It should never be used where malignancy is suspected.

When visiting Paris in 1893 I remember seeing quite a number of supravaginal hysterectomies for fibroids. After removal of the uterus the cervical stump was sewed into the abdominal incision and carefully packed around with iodoform gauze.

We are all thoroughly familiar with the perfect technique as practiced to-day. The average hysteromyomectomy is now a simple procedure, but tumors wedged tightly in the pelvis or associated with many adhesions still occasionally give us anxious moments.

When the myoma is firmly fixed in the pelvis and so large that it is impossible to get a finger in between it and the pelvic wall, and when tying the round ligament and getting into the broad ligaments does not help, I usually do a myomectomy if I am dealing with a single large nodule. One can then often carry out the technique of the simple hysteromyomectomy. When the tubes and ovaries are densely adherent, it is often easier to clamp at the cornu, amputate at the cervix, and then loosen up the tubes and ovaries under sight.

Sometimes the growth is in the upper part of the uterus and the cervix is very long. In such cases one can sometimes push down the bladder, cut across the cervix, clamp each uterine vessel and peel the uterus out from below upward.

Bisection of the uterus is a most valuable procedure when nothing else will suffice. I never use it, however, when it can be avoided, because, if we have an infected uterine cavity, there is danger of spreading the infection, and if there be a coexistent carcinoma of the body, cancer cells are bound to be disseminated.

When doing a supravaginal hysterectomy, continued traction and blunt dissection are two very valuable procedures. We know that if a small rubber tube is pulled taut its walls come together. If we by chance tear a uterine artery, by exerting strong traction we can pull it taut, and bleeding is often temporarily prevented.

After removal of the uterus when a myoma has burrowed down into the broad ligament, it is always wise to locate the ureters to see if they have been injured. I have dissected out three pairs in one morning.

I well remember a patient sent to me by Dr. John Fulton, years ago. The uterus extended well up to the umbilicus, and filling the vagina was a submucous myoma about 14 cm. in diameter. The outlet was intact and very small, and the patient had a low hemoglobin.

The right ovarian vessels were controlled and tied through a narrow chink, about 1 cm. broad. The left ovarian vessels were easily controlled. We then cut around the vaginal vault and lifted the myomatous uterus with its large submucous nodule up out of the abdomen. I next searched for the right ureter, which had been on my mind throughout the entire operation, and found it snugly tied with the ovarian vessels. I dissected out the ovarian vessels, retied them and liberated the ureter which, although tied, had not been cut. Before closing the abdomen I made a small gridiron incision in the appendix region and carried a slender drain down extraperitoneally to within an inch of the point at which the ureter had been temporarily tied, so that, if a leak should occur, the urine could escape externally. However, no leak developed, the ureter took care of itself.

I have elsewhere[2] referred to a very large myomatous uterus with a large abscess between its upper portion and the transverse colon. In this case a supravaginal hysterectomy was first done, and the uterus and transverse colon were then lifted out of the abdomen. In this manner the contaminated part of the field of operation was rendered extra-abdominal and the chance of infection was reduced to the minimum.

Bleeding from broad ligament veins, when a wide dissection is being made for cancer of the cervix, occasionally causes much alarm. I have seen the blood well up as out of a spring. A couple of large Mikulicz pads firmly packed down on these vessels for two or three minutes will enable the operator to get a moment or two for thought and also give him time to assemble all the instruments that he may need. When he is ready, the pads are pulled out quickly and the vessels caught with long Wertheim clamps. Of course, in all these cases the ureters should have been previously located and isolated.

It is always advisable to operate under perfect vision. Let me tell you of a recent experience with a large myomatous uterus. On the right side the ovarian pedicle was rather thick. I carefully dissected it out before clamping. The appendix had traveled up along the pedicle so that its tip was near the ovary. It was dissected free and dropped back until the hysterectomy had been completed.

The left ovarian pedicle was also thick. I examined it carefully and before clamping looked for the left ureter. It had been carried by the broad ligament tumor well above the pelvic brim and was far above the point at which I usually clamp the ovarian vessels. Had I followed the routine procedure, the appendix would have been cut off near its base and tied in with the ovarian vessels and on the left side a loop of the ureter would have been removed with the uterus. Always examine the ureters if in doubt, and always make sure that no doubt exists.

I discussed the surgical methods of dealing with pelvic infections at length at the Clinical Congress of Surgeons of North America at their Philadelphia meeting in October, 1916.[3] In this paper, therefore, I shall consider only a few of the salient points.

When everything is glued in the pelvis, I usually hunt for the point of vantage in the individual case, loosen this up and see if it brings into view another point of attack. Where this is impossible, if it be feasible, I clamp at the uterine cornu on either side and go down and do a supravaginal amputation. With the uterus out of the way one can at leisure loosen up the appendages on either side.

In cases in which it is impossible to remove the uterus and appendages intact, or to remove the uterus prior to taking out the appendages, we should resort to bisection.

When a pus tube is removed and the uterus saved, a wedge of the uterine cornu should always be removed with the tube, because there are apt to be small abscesses in the cornu in such cases.

I do not wonder that the surgeon shies when confronted with postpuerperal pelvic infections. He is handling surgical dynamite.

Early in my practice I saw with Dr. George L. Wilkins, a patient who had been confined six weeks before. She had some fever and on pelvic examination I found a moderate degree of induration in the vaginal vault. At 1 p.m. I made a small incision in the vault just behind the cervix. A little bloody fluid escaped. I introduced an iodoform drain.

I was hurriedly called to see her at 6 p.m. She was in profound shock. Her pallor was marked, her pulse 160 and almost imperceptible. The operation had been performed in her own home. No time was to be lost. I ran to the nearest telephone, called assistants from the hospital, and in twenty-five minutes we were opening the abdomen. There was no hemorrhage, but travelling up the pelvic peritoneum was a red line just as one finds along the margin of an active erysipelatous inflammation. We had evidently stirred up the latent streptococcus infection. I wiped off the intestines lying in the pelvis, wiped off the pelvic peritoneum and abundantly drained the pelvis.

Next morning I passed the house in the street car expecting to see crêpe on the door. There was none. I went back and found the patient better. Six weeks later she trundled her baby sixteen blocks to my office to let me see how well she was.

Others have had similar experiences, and this is undoubtedly the reason why surgeons are loath to deal with postpuerperal streptococcic infections. These infections usually travel out from the cervix to the broad ligament, and when Douglas' culdesac is opened for drainage, the organisms reach the peritoneum and travel like wildfire. We should reach the foci of inflammation, but must avoid the peritoneum. If there be infection in the broad ligament, make a gridiron incision above Poupart's ligament, go down to the peritoneum, but not through it, and gently push the peritoneum inward until the indurated area is reached. Sometimes pus will well up. Usually, there is just an area of induration. Don't disturb it; lay two or three cigaret drains down to it. If there be induration on the other side, carry out a similar procedure there. It is astonishing to see how these areas of induration that have existed for weeks will literally fade away in a few days when drainage has been established. Under no circumstances open up Douglas' culdesac in postpuerperal broad ligament infections. It is almost criminal.

While on the subject of streptococcus infections, I may just refer to the fact that massive streptococcus peritonitis may simulate hemorrhage. In Dr. Wilkins' case I thought we had an intra-abdominal hemorrhage following operation, but there had been no bleeding at all.

In 1896, while I was resident, we had a very difficult pelvic case. Next day the patient was profoundly shocked and had an almost imperceptible pulse. The abdomen was at once reopened on the supposition that there was a hemorrhage. There had been no bleeding, but there was a widespread peritonitis due to the streptococcus.

When the appendix is retrocecal and firmly tied down, it is often difficult to reach it through a gridiron incision and occasionally, where a median line incision has been made for some pelvic lesion, it is almost impossible satisfactorily to expose the appendix except by an appreciable lengthening of the existing incision. It is in just such cases that the tape method of drawing on the appendix is a great comfort. Dr. William Neill reported this method[4] for me eight years ago.

As soon as the base of the appendix is located, a Kelly forceps is passed through the meso-appendix at this point and a piece of tape pulled through. Traction is made on this tape and more of the appendix exposed. A second tape is now placed similarly, about half an inch farther along the appendix. Traction is made on it and more of the appendix is exposed. A third tape is now placed and so on until the tip is reached. One can then clamp off the meso-appendix from tip to base. The method is simple, gives excellent exposure and saves much time.

When operating for cancer of the cecum I have found it a good plan to isolate the right ureter at the pelvic brim, and place a small tape around it before starting to loosen up the cecum. If this is done, one can at any moment tell the exact position of the ureter by making gentle traction on the tape.

Elsewhere[5] I have referred to a physician of 78 who had a very large umbilical hernia. Many intestinal loops were so densely adherent to the sac that their liberation was impossible. I was desperate and did not know what to do. Finally, I peeled off the skin of the sac and found the underlying fascia and peritoneum formed but a very thin layer. By transmitted light I deliberately cut up the sac, leaving pieces of it attached to the many loops. When the small bowel had been successfully unraveled, the ragged pieces of sac attached to these many loops were trimmed off just as one would trim repair patches on the inner tire of a bicycle tube. The bowel was then returned to the abdomen and the ring closed. No other procedure would have given us the result, and the release of the many dense adhesions was out of the question. This gentleman of 83 is still in active practice. I saw him less than a week ago. Modifications of this method are bound to be of value from time to time.

In 1911 under the title "A Malignant Intestinal Growth Requiring the Removal of an Unusual Number of Abdominal Structures,"[6] I recorded a most unusual case. In the introduction I said: "My object in reporting this case is to show what may be done in some cases in which the surgeon on opening the abdomen feels completely baffled, but in which on carefully surveying the field he finally detects the key to the situation, and can remove the growth that at first has seemed impossible of enucleation."

The patient, a very thin, pale, emaciated woman, 56 years of age, weighed only 85 pounds. Dr. Ira McCurdy of Frederick, Md., her physician, felt that an operation offered the only hope. We found a carcinoma of the descending colon firmly plastered on to the posterior surface of the uterus and also extending to a loop of small bowel. The appendix was also tied up in the mass.

The entire mass, consisting of a portion of the descending colon, a large area of small bowel, the uterus, tubes and ovaries and appendix, was removed in one piece. The key to the situation was a preliminary hysterectomy and excision of the appendix. I then packed the pelvis full of gauze and was able to bring the intestines, uterus, tubes, ovaries and appendix well out of the abdomen before the removal of the bowel was attempted. The growth had started originally in the descending colon and had extended by continuity to the small bowel and to the posterior surface of the uterus. To have separated the uterus from the tumor would have caused the escape of much grumous, cancerous material. The patient lived in comparative comfort for nearly two years.

In April, 1916, a woman, aged 37, entered the Johns Hopkins Hospital on account of two fecal fistulæ situated in an old midline abdominal incision.

She had been operated upon elsewhere in 1909 for pus tubes and peritonitis. A fecal fistula developed and she remained in the hospital for ten weeks. The fistula persisted for two and a half years and then closed. Four years after operation an abscess developed in the abdominal scar and the fecal fistula opened up. She was again operated on in February, 1915, and in the following June the fistula closed. It reopened in 1916, and when I saw her, there were two fistulous openings in the abdominal scar. There had been no bowel movements without purgatives for five or six years.

On May 1, 1916, after protecting the fistulous openings, I made an eliptical incision, freeing the previous scar down to its intra-abdominal attachment. After loosening up the slightly adherent omentum, I came upon a tangled mass of small bowel, into which the fistulous tracts entered. Behind the uterus was a hard mass about 10 cm. in diameter. This seemed to be a myoma. I picked up one loop of bowel and traced it until it tapered down to a fine point and merged with the fistulæ. I followed up a second loop until it ended in a similar manner. No matter in which direction I worked, it finally brought me to this tangled mass and the condition seemed hopeless. Finally, I remembered that the intestines and the mesentery are like a huge fan, the loops of bowel corresponding to the outer convexity of the fan and the mesentery to the handle. That was the key to the situation. I picked out a normal loop of bowel near the tangle and then traced it down to the mesentery. I then followed the mesentery along until I got a normal loop at the other end. The intervening bowel was then cut away and a lateral anastomosis done.

Subsequent study of the specimen showed that the supposed myoma was a hard fecal concretion, about 9 cm. in diameter, situated in a distended loop, and that loop after loop of small bowel communicated with this cloaca by a small opening. No amount of dissection would have been of the slightest value and the operation would have been an absolute failure. The patient made a good recovery.

When it is impossible to unravel the convexity of the fan go down to the handle—the mesentery—for your bearings.

Just a word as to the patient who has some rectal discomfort at the menstrual period and who on examination is found to have a small nodule in the vaginal vault directly behind the cervix and no other trouble elsewhere in the pelvis. This nodule will almost invariably be found to be an adenomyoma of the rectovaginal septum. Its early removal will often save much subsequent trouble.

Every man who takes up pelvic surgery should serve an apprenticeship in the gynecological dispensary. He will soon be profoundly impressed by the many human wrecks—wrecks caused by an early menopause. Of course, in many cases the surgeon has no alternative but to remove all the pelvic structures. There are many others in which one ovary at least might be saved. I cannot urge you too strongly to save every ovary that you possibly can. Of course, I realize that this conservatism may occasionally necessitate a second operation, but when all is said and done, judicious conservatism should be our aim. One recent case of conservatism has given me profound pleasure. This was reported by my former resident, Dr. Henry N. Shaw[7] of Los Angeles. On October 6, 1919, I operated on F. L., aged 36. Elsewhere she had had the right tube and ovary removed, several years before.

When I opened the abdomen she had a left cornual pregnancy. I resected the left cornu and then implanted the outer end of the left tube into the left cornu of the uterus. She subsequently became pregnant but at the end of the seventh month lost her child on account of a placenta previa. She again became pregnant and gave birth to a living full-term child June 2, 1922.[8]

Pathology is the foundation of medicine. Surgical pathology is the bedrock of surgery. With the splendid teaching in pathology that we now have every young surgeon should be a good pathologist. Not only is the study of pathology fascinating, but it is also absolutely essential. The surgeon of the future, if he neglects this field, will be sadly handicapped.

Now every man who becomes resident gynecologist in our department has one year in general pathology,[9] and one year in gynecological pathology also. In other words, during his five years in the department, two of them are spent in pathology.

I have in a sketchy way given you some of the things that have impressed me most in our surgical service. Doubtless many of you have met and solved just the same problems.

To a former member of the Medical Society of the State of Pennsylvania I owe most of my training. My chief, Dr. Howard A. Kelly, has always been a most indefatigable and brilliant worker and has ever been on the firing line. In years to come, when the medical historian is summing up the advances made by the men of the present generation, it will be found that no other man in the world in his time has done more to place pelvic surgery on a firm foundation than Howard Atwood Kelly.

Much as he has done for surgery as a whole, he has done even more for the men associated with him. He has gone out of his way to give them every opportunity and their successes have given him more pleasure than if they were his own accomplishments. I prize beyond words his friendship, and these thirty-two years of intimate association with him.

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9. This courtesy of our Professor of Pathology, Dr. William G. MacCallum, is greatly appreciated.

THE PRESERVATION OF THE OVARIES IN PELVIC SURGERY*

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When, in 1900, Sajous brought out his work on the ductless glands, the medical profession was both astonished and skeptical. As the years go by, however, it becomes increasingly evident that Sajous possessed a prevision and a wisdom beyond his time. The importance of the endocrines to the individual is now generally recognized. Our knowledge of them—how they combine and act together, how one supplements the other in its functional activity, and the extent to which they are mutually dependent—is still very meagre; we have much to learn. It is more important that we devise some clinical laboratory method for determining, in a given subject, which of the internal secretions are excessive and which are deficient. At the present time we may judge this only by the mental and the physical development or the infirmities of the individual, and by the effect produced by the administration of glandular extracts, empirically selected.

The ovaries are of the greatest consequence to the individual during the reproductive period; but even before puberty, their potency becomes manifest, for as they go on to full development they influence not only the evolution of the other portions of the reproductive tract, from the infantile to the mature, but they also promote the appearance of the secondary sexual characteristics. Even before the ovary has fully ripened and the periodic rupture of the graafian follicle begins, prior to the appearance of the menses, the same secretory elements in the ovary (corpus luteum, internal gland, stroma, etc.) are found as after puberty. This control of the function of the generative organs is exercised by the ovaries throughout the reproductive period, ceasing only when the supply of primordial follicles is exhausted, and the ovary shrinks and shrivels up—when the secretory activity ceases and the generative tract is no longer capable of performing the function of reproduction.

Notwithstanding the fact that the ovaries are the indispensably necessary internal secretory glands concerned with genital functioning, it must not be forgotten that there is a correlation between these organs and many or all of the other endocrine glands. This association is borne out by many observations and facts:

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1. *Hypofunction* of the pituitary body after puberty results in adiposity and general atrophy and diminution in the function of the genital organs, whereas *hyperfunction,* such as is seen early in acromegaly, causes an increase in the functional activity of these organs. During pregnancy the pituitary gland enlarges, and extracts of the posterior lobe have a marked effect on the uterine muscle.

2. The thyroid gland develops at about the age of puberty, and it enlarges with the onset of menstruation and during pregnancy. Myoma of the uterus and hypertrophy of the thyroid gland are frequently associated.

3. The suprarenal glands hypertrophy during menstruation and pregnancy. A precocious and abnormal sexual development is commonly connected with hypertrophy and new growths of suprarenal glands, whereas diminished genital activity and even organic atrophy is observed in Addison's disease.

4. Mention must also be made of the pronounced overdevelopment of the sexual organs before puberty which is found in cases of tumor formation of the pineal gland, and of the influence that expulsion of the placenta from the uterus exerts upon the secretion of the mammary gland.

When the ovaries are removed, the endocrine system suffers a loss, and as the ovarian products are no longer delivered to the endocrine storehouse, there must be a readjustment of the supply of these products and of the correlation between the ovarian and the other endocrine supplies. The withdrawal of the ovarian secretion not only arrests menstruation and reproduction and affects the generative function, but it also has an influence on metabolic activity as a whole. That this effect is not so marked as it would be following the loss of the thyroid, the adrenal glands or the pituitary, is probably due to the fact that nature has ordained that the activity of the ovary should be limited, and hence the organism, after the menopause, is prepared to get along without the secretory products of the ovary. With the loss of these, however, certain changes in the physical and mental condition of the individual take place, and while these may be considered normal and cause no great inconvenience at the end of the reproductive period, when they are brought on artificially earlier in life they are abnormal, and may prove quite distressing and result in serious nervous, vasomotor or mental disturbances.

The loss of the ovaries in the adolescent and unmarried girl results in a retardation of full development, unfitness for the marital state, and inability to reproduce. The physical changes characteristic of the menopause (increase of adipose tissue, shrinkage of the genitalia) are apt to occur, and the subject is confronted with the fact that she is abnormal—different from her sisters, an incompetent and, so far as reproduction is concerned, useless member of society. Added to these physical changes there are nervous manifestations, such as hot and cold flashes and the like, and certain indefinable nervous symptoms that the patient finds it difficult to describe and impossible to explain.

Castration, and the consequent interruption of the ovarian function in the young married woman who has borne children, is followed by less serious results, and although she may exhibit the physical and vasomotor disturbances characteristic of the artificial menopause, the mental disorder is less marked, for having fulfilled her mission as a woman, she may reflect that while deprived of certain functions, she has reason to be thankful for past blessings.

With the advance of age, the effect of bilateral oöphorectomy, so far as vasomotor and physical changes are concerned, becomes less and less a menace to the woman. Moreover, the degree to which the wishes of the subject for marital and reproductive life have been satisfied, the less marked are the mental disturbances prone to be.

One may ask why the manifestations of the artificial menopause are likely to be more disturbing than are those of the normal menopause. This may be due to the fact that the part of the ovarian secretion that correlates with other endocrine secretions and is concerned with nutrition, nervous balance, etc., can be spared better after the age of forty, and that at this time some of the other glands normally assume the supply of a substitute that may be "just as good." Whether or not this explanation is well founded, the fact remains that the normal menopause is not often attended by serious consequences, and especially rare is an untoward effect upon the mental condition and the happiness of the patient. Thus we see that the mental effect of castration or of the cessation of ovarian function is dependent upon the age, the social status, and the character of the individual. One can readily conceive the morbid introspection of the sensitive, intellectual virgin upon realizing her utter unfitness for filling a normal woman's sphere. Unless, in such an instance, the will is stronger than the emotions, and unless the disposition is particularly buoyant, a prematurely old, unhappy woman is the result.

From what has been said, it would appear that the surgeon should always endeavor to preserve the ovarian function unless the patient is close to, or has already passed, the menopause. It is apparent that the need for conservatism is greatest in the young, immature and unmarried woman, and that it diminishes gradually as marriage, childbirth and advancing years render the loss of complete genital power less and less necessary to the life and well-being of the individual.

The misery occasioned by the nervous and physical changes that occur in castrated women, and the desire to avoid them, form the basis for conservative surgery of the ovaries. The appalling results that followed bilateral oöphorectomy as practiced years ago brought the medical profession to a realization of the serious effect of such procedures in the young. Although at the present time no one denies that in pelvic surgery it is desirable to preserve the ovaries, opinions differ as to how far this practice should be carried out by the surgeon who is confronted with the risk of leaving diseased structures behind. Some gynecologists believe that the complete removal of all diseased structures is of more importance than is the effect of castration. They consider that the ill effects of castration have been greatly exaggerated. They do not find menopause symptoms so common nor so distressing as do other investigators. As Graves has pointed out, some of the nervous manifestations may be attributed to unskilful surgery and the development of painful stumps and adhesions, hernia, etc., following operation. The mental and nervous symptoms of the patient may be augmented by the derision of a brutal husband, or by the ill-concealed reflections of misguided acquaintances. This, Graves believes, partly explains the appalling results that occurred in the days of Battey and others. Furthermore, there is now at hand a remedy for the disagreeable vasomotor effects of castration that did not at first exist, namely, the dried products of the entire ovary, although, it is true, there is a difference of opinion as to just how effective such products are. The evidence is, however, overwhelming that physical and mental disturbances do follow ovariotomy and that they are due solely to the loss of the ovaries. Moreover, while Grave's explanation may account for some of the untoward .results of oöphorectomy as practiced a decade ago, there is enough accumulated evidence to prove that even with the most skillful surgery, the removal of all the ovarian tissue may be a serious matter, and its effects not always be possible of control by any form of medication. Unquestionably, therefore, conservative surgery is highly desirable, unless such conservatism entails further suffering on the patient. If by being conservative we retain organs that will almost certainly undergo further degeneration and give rise to trouble, then we must balance the advantages and the disadvantages of the two courses of action and choose between them.

While the subsequent fate of the conserved organ depends, to a large extent at least, upon the technique of the operator, as will be explained further on, a most important factor, of course, is the condition of the part itself at the time of the operation. Furthermore, there would not be any justification in assuming a considerable risk in a woman past thirty-five unless the circumstances had been explained to her beforehand and she demanded that conservatism be practiced.

The opponents of conservation of the ovaries decry this practice, especially when the uterus itself must be removed. It is a matter of clinical observation and experience that conserved ovaries functionate for a longer period after operation when the uterus is retained. From this it has been argued that there is a definite mutual interdependence between the function of the uterus and that of the ovary (Graves), and that when it becomes necessary to remove the uterus, one might as well remove the ovaries also—that the result to the woman is the same (Bailey, Kross). Although it goes without saying that the ideal in conservative surgery is to leave active ovaries and a uterus that menstruates, it is questionable whether the effect of hysterectomy on the ovaries is due to a mutual interdependence of function between these two parts, or whether it is merely a question of blood supply. The answer would depend, to some extent at least, upon the technique of the operator and on whether he performed a supravaginal or a complete hysterectomy. In spite of the assertion of some gynecologists and the results of experimental work quoted by them, this seems an entirely logical conclusion. Even when supravaginal hysterectomy is properly done, a certain amount of circulatory disturbance takes place, and with panhysterectomy, as practiced by some surgeons, this would be greatly increased. My own series of cases, as well as those reported by Clark and Norris, would seem to show that in performing supravaginal hysterectomy for myoma, ovaries conserved with the tubes, or even without them, continue to functionate for a considerable time, practically never cause trouble, and except in rare instances, do not undergo cystic degeneration.

How far should we go? When are we to be conservative and when must radical measures be adopted? Such questions may be answered only by comparing the results of conservative with those of radical surgery in the hands of the same operator. Even here it is difficult to make positive deductions. Thus, the operator, during the course of his observations, may change his early inclinations as regards conservatism—that is, he may start with an ultraconservative practice and conclude with an ultraradical one, or vice versa.

There is much difficulty in determining positively the condition of the patient subsequent to operation without securing a personal interview and making an examination, for some patients minimize whereas others magnify their complaints. In a series of my own cases, I tried to ascertain the results, but limited my investigations to private or semiprivate patients, since they are easier to trace and as a rule give more reliable answers to a questionnaire than do clinic cases. Although it has been impracticable for me to examine or to see all these women in person, and while the inaccuracies just noted cannot be denied, on the whole, the results may be regarded as credible. I have attempted to compare the results following radical measures with those attained by conservatism in myoma and in pelvic inflammatory disease. The series has not been thoroughly studied, but I hope to do this at a later time in order to determine positively the questions at issue. For this purpose personal interrogation and examination of the patient may be required, or at least more detailed information secured than can be had from the answers to a brief questionnaire.

In this later study the points to be considered more fully and accurately are: (1) The difference in the prognosis between an uncomplicated myoma and pelvic inflammatory diseases. (2) The difference in the prognosis between cases of the same age. (3) The difference in prognosis between leaving one and leaving both ovaries. (4) The time that elapses between the operation and the appearance of menopausal symptoms, as well as the duration of the latter.

It will be observed that the average age of the radical cases was greater than that of the conservative, some of them, indeed, having passed the menopause. This renders the comparison faulty, yet those who had already reached or passed the menopause and, therefore, would exhibit none of the attendant symptoms, about equals those in whom, on account of their age, menopausal symptoms are to be expected. Further errors creep in because, in replying to the questionnaire, the patient may refer only to her condition at the time she answers, which may be some time after the operation, when she is naturally entering the menopause. Or early artificial menopausal symptoms having subsided, she may rejoice in her present health and forget the symptoms of the past. For these reasons these results are given for what they are worth. I believe that, on the whole, they reflect the truth, but, as stated previously, it is my intention to make a more detailed study which I shall publish later.

In the course of this work I have become convinced of certain factors that go to make for success or for failure. One should never remove an ovary simply because it does not *look* typically normal. Ovaries are, to some extent, like noses—they possess individual peculiarities. One must be sure not to mistake a mature graafian follicle or a recent corpus luteum cyst for a pathologic condition. In adherent displacements of the uterus with bilateral pelvic adhesions, one occasionally finds an ovary with a thickened capsule, containing multiple small cystic follicles. If the second ovary is healthy, the affected one may be removed; but if both ovaries are diseased, it is better to separate them both from adhesions and improve their circulation by elevating them into good position along with the uterus, by making some disposition of the round or the utero-ovarian ligaments. Such a course is preferable to needling, ignipuncture or resection.

If resection of an ovary is imperative, then the ultimate result of the procedure will depend partly upon the technique. The actual condition of the ovary also plays an important, probably the most important part, for if it is the seat of cystic degeneration—"small multiple cystic degeneration"—resection, while it will reduce its size, for a time at least, will not always check the progress of the disease. The most favorable cases for resection are single graafian follicle or corpus luteum cysts, when the cyst cavity may be opened and the lining membrane shelled out without seriously invading the ovarian tissue itself. The difficulties of technique that concern us most in resection are: (1) Control of hemorrhage without impairing the ovarian circulation, and (2) such careful approximation of the ovarian incision that no raw surface will be left to invite the formation of adhesions.

Figure I illustrates a technique that may be employed when the cyst lining can be shelled out from the ovary. Figure II shows the technique employed when removal of ovarian tissue is required. The operator must always plan his incision so that easy coaptation of the ovarian tissue is possible, and he will do well to avoid the hilus, where hemorrhage and interference with the blood supply is most likely to occur. I have had no recurrence of trouble following resection of a single graafian follicle or corpus luteum cyst, but in one patient, a woman 21 years old with

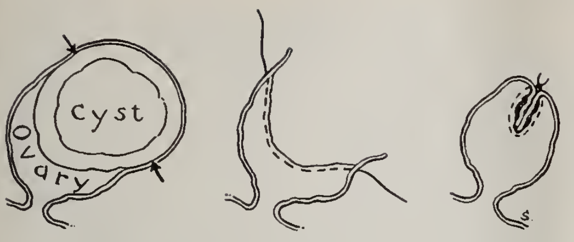

Fig. I. Illustrating the technique that may be employed when the cyst is enucleated.

bilateral cystic degeneration of the ovaries (both the size of goose eggs), in whom I did a resection on each side, a complete removal was later found necessary. I have avoided resection except in those cases where nothing else would do, often taking the alternative of leaving an ovary that was slightly diseased if the second one was beyond repair, or when the second ovary was healthy, taking out the affected one altogether.

In conservation of the ovary it is of great advantage to allow the tubes to remain, and this was possible in a majority of cases. At times, however, it is necessary to remove the tube, even when it seems practicable and desirable to save the ovary. The technique then especially is of importance, i. e., to remove the tube with as little disturbance of the circulation as possible, to leave the ovary in a good position, and so to peritonealize the raw surfaces left by resection of the tube that adhesions will not form and interference with the ovarian circulation will not occur. Disturbance of the ovarian circulation will produce cystic changes in the ovary, as is demonstrable after the Baldy-Webster operation on the round ligaments, unless great care is exercised to avoid placing tension on the ligaments and thus obstructing or impeding the flow of blood in the ovarian veins. The technique of ligation of the blood vessels, suspension of the ovary, and peritonealization of the stumps is shown in the accompanying illustrations.

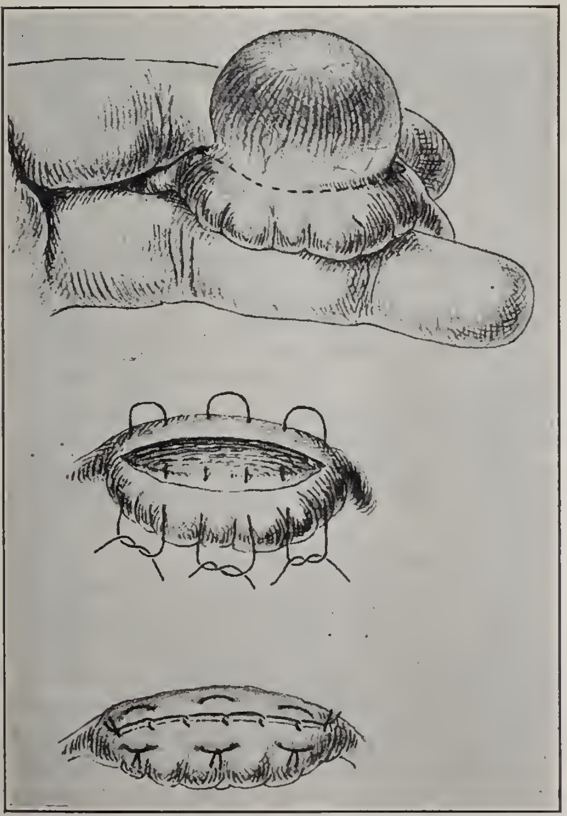

Fig. II. Showing the technique employed when removal of ovarian tissue is required.

The administration of ovarian extracts by mouth for the purpose of supplying the ovarian secretion when the ovaries have been removed has been very satisfactory in my practice; in that of many others it has appeared to be useless—a difference that may possibly be explained by the variation in the purity and the freshness of the product, and in the size of the dose and the length of time during which it is administered. Too often the physician is not careful to prescribe a reliable, fresh preparation, or the pharmacist may supply an old or an inferior article. Unless the patient receives specific instructions, she will not realize that it is necessary for her to continue medication over a long period of time. Immediately after operation the corpus luteum extract may be used hypodermically until the stomach will bear the dried preparation of the entire ovary. Ordinarily I prescribe 2 grains of the dried entire ovary three times daily, but in some cases I have no hesitation in increasing this dose to double that amount, and continue it for from six or eight months to a year, or until the symptoms subside.

As regards transplantation of the ovaries, I must confess that I have never adopted this method of preserving the menstrual function. This has not been done with deliberate intent, but probably because, according to my point of view, the indication did not appear to present itself or the procedure was technically impossible or unwise.

Transplantation of the ovary is indicated only when both ovaries must be removed, and in these cases it is my invariable rule to perform supravaginal hysterectomy. To leave the uterus *in situ* without adnexa is objectionable, for obvious reasons, and it is doubtful whether transplantation of ovarian tissue after removal of the uterus is of any value. Bailey asserts that "transplantation of the ovary is of no value in relieving menopausal symptoms unless the uterus or part of it remain." It appears to me that the disadvantage of leaving the uterus when the ovaries are removed, would outweigh the possible postponement of menopausal symptoms by making ovarian transplants. The chief indications for ovarian transplantation are said to be: In bilateral, benign ovarian tumors, in cases in which resection is not practicable (Unterberger), and in chronic gonococcus pelvic infections (Bell). The first of these indications very rarely arises, and in the second instance there is manifest danger and a strong probability of failure in the implantation of diseased ovarian tissue, whether the site selected is the omentum, the space of Retzius, or the muscles of the abdominal wall. Martin, who has studied this subject since 1903, concludes that:

"1. Clinically, there is very little to encourage one to believe that transplantation of the ovaries as practiced up to the present time has more than speculative value as a surgical procedure.

"2. There is some evidence that auto-transplants are of some value in deferring the symptoms of the menopause and delaying the cessation of menstruation. It is difficult, however, not to attribute some of this evidence to suggestive therapeutics or to unattached ovarian tissue left *in situ*."

On the whole, I doubt whether much is to be gained by such a procedure. I prefer to leave a portion of a badly diseased ovary *in situ* rather than to remove it and make a transplant. I have done this on a number of occasions—sometimes unwittingly, and at other times by design.

CONCLUSIONS

1. Conservation of the ovary, one or both, is of great value in pelvic surgery. The condition of such patients after operation, on the whole, is vastly better than that of those who have been exposed to radical procedures. This is shown by an absence or a postponement of menopausal symptoms, less likelihood of backache or abdominal pain, diminished necessity for postoperative pelvic treatment, and by the patient's own estimate of her general well-being.

2. The surgeon's attitude should vary according to the age and social standing of the patient. In the young unmarried woman the ovaries must be conserved at all hazards.

3. In older unmarried women, the desire for marriage and future child-bearing, as well as the nervous and mental equilibrium of the individual, must guide the operator.

4. In sterile married women who desire to bear children one must incline more to the conservative. In multiparæ, conservation of the uterus with the ovary or ovaries is less important, but in each instance the final decision must rest on the age, the social status, and the desire of the patient herself.

5. After thirty-five, the indication for conservatism rapidly declines, for, although menopausal symptoms may supervene, the use of ovarian extract will tide the patient over a trying period and the balance will then be restored, the individual being free meanwhile from the physical suffering entailed by the presence of pathologic lesions in the pelvis and their results.

6. Conservatism should not be practiced except in the very young and unmarried when it is probable that the organs allowed to remain will give rise to future trouble, unless it is the expressed desire of the patients to run such a risk.

7. The conservation of ovaries after hysterectomy for myoma uteri is more uniformly successful than after hysterectomy for pelvic inflammatory disease. This is due obviously to the fact that in a much larger proportion of myoma cases the ovaries are healthy.

8. When possible, the tube should always be conserved with the ovary.

9. Single graafian follicle or corpus luteum cysts of the ovary are more favorable cases for resection than are small or multiple cystic degenerations of the entire ovary.

10. When it is important to conserve the ovarian function and one ovary is entirely healthy and the other one is diseased, extirpation of the diseased organ is preferable to ovarian resection.

11. In cases of displacement of the uterus with pelvic adhesions in which both ovaries exhibit thickened capsules and multiple small cystic degenerations and conservatism seems desirable, it is advisable to release adhesions and place the ovaries in a good position by means of some procedure not involving direct suture of the ovary itself. This is usually more successful than bilateral resection, unless decided hypertrophy is present. In the latter case, of course, bilateral resection must be performed.

12. The unfavorable results of hysterosalpingo-oöphorectomy are not always recognized by the patient in the form of hot or cold flashes. Such patients may complain of nervous instability, irritability, loss of initiative and general asthenia, without mentioning the typical vasomotor disturbances.

13. The sexual appetite is but little affected by castration in those women who have married and in whom the libido sexualis has been developed, and in them but slight change need be anticipated. Not infrequently the pathologic condition removed by operation, even though it involves complete castration, relieves dyspareunia and makes coitus more acceptable to the woman than before.

14. The administration of the dried preparations of the entire ovary, freshly prepared, does much to ameliorate the symptoms of the artificial

menopause. When bilateral oöphorectomy is performed, the administration of these products should be employed immediately and continued indefinitely.

15. Judgment should be exercised in acquainting the patient and her family with the nature of the operation when both ovaries have been removed, or when, in spite of conservation of one or both ovaries, the removal of the uterine fundus or excision of the fallopian tubes has arrested the menstrual flow or made reproduction impossible. Much can be done in this way to save the pride of the wife and the faithfulness of the husband, and the patient's mental complacency will not be left to the mercy of inquisitive and gossiping friends.

SYNOPSIS OF CASES

Comparison of Ovarian Surgery	*Radical*	*Conservative*
Number of cases	85	85
Average age of patient	41	36
Menopausal symptoms	53	19
Backache or abdominal pain	42	29
Subsequent pelvic treatment:		
(a) Operative		5
(b) Nonoperative	42	4
RESULT OF OPERATION AS VIEWED BY PATIENT		
Very successful	11	38
Successful	69	40
Not successful	5	7

A REVIEW OF THE PRESENT STATUS OF MINOR SURGICAL PROCEDURES IN GYNECOLOGY*

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When Dr. Foss asked me to write a paper for this meeting he suggested that a discussion might be apropos as to whether or not minor surgical operations in gynecology are too much the vogue. In discussing this subject it is necessary to review briefly the various pathological conditions which necessitate the aid of minor surgery and the symptoms which bring the patient to a physician for relief, for after all it is upon a correct interpretation of the symptoms, in relation to etiology, that proper judgment may be formed as to the necessity for surgical treatment.

Uterine bleeding, leucorrhea and pelvic discomfort such as backache, fatigue and a feeling of loss of support are in a general way the symptoms which cause the patient to seek relief, and which play the most important part in the indication for minor operations.

The frequent and general use of the curette in the past, as a cure-all for any or all of these conditions, now passes into history, and it is strange how its use could ever have grown so popular when of so little apparent benefit, aside from its value as a diagnostic aid. Curettage for uterine bleeding seldom gives the hoped for result because this symptom is usually secondary to new growth or to conditions which lie far beneath or beyond the mucous membrane of the uterus. Seldom even in endometritis with marked hyperplasia and hypertrophy, as for instance the condition commonly known as polypoid endometritis, does a curettment have any curative effect. This is true for the reason that the infection has already extended into the deeper uterine structures, causing changes which vary from those of a simple metritis to a chronic fibrosis, and the bleeding results from this cause and not from the more superficial disturbance. It may be curative in rare instances where bleeding persists from the retention of small placental remnants after early abortion and where the condition has become more or less subacute or chronic—that is, several weeks after an abortion which occurs in the early weeks of pregnancy when there is little enlargement of the uterus. Even here there is always danger of spreading the infection by the destruction of the protective zone. Changes may already have occurred in the muscular structure as a result of infection which cause a continuation of the bleeding after the use of the curette.

When it is necessary to produce a therapeutic abortion there are those who prefer the use of the curette when the operation is performed in the early weeks of pregnancy. Fortunately this operation is seldom performed and at present tuberculosis is about the only indication for its use. When necessary, it should be done by one who is skilled and who appreciates the danger.

The use of the curette to empty the uterus of retained placenta after abortion or full-time delivery, is mentioned only to be condemned. It is here the greatest harm may be done, not only in the danger of causing immediate spread of the infection, thus converting a local into a systemic infection, but by aggravating the local changes within the uterus, causing a metritis which may become chronic and difficult to cure. It is much better under these circumstances to use pituitrin or pack the uterus with iodoform gauze, repeating this operation at twenty-four hour intervals until the uterus expels its contents. Curettage as a cure for leucorrhea is a heritage that does no credit to our predecessors. It aggravates rather than cures and has no place in the treatment of this condition. Experience teaches that aside from its use in the diagnosis of new growths, especially cancer of the uterus and upper cervix, the curette should be abolished as a relic of the past and an instrument that has done infinitely more harm than good. Thus one of the operative procedures that has been most widely used now almost disappears.

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The causes that give rise to a vaginal discharge are seldom located within the body of the uterus. Leucorrhea is a symptom usually due to infection and when specific has its origin in Skene's or Bartholin's glands or lies within the cervix. A persistent irritating purulent discharge is nearly always gonorrheal in origin. Seldom does one accomplish more than temporary relief by any method of local treatment in the form of application of drugs, and much time is wasted in such effort. The removal of Bartholin's glands by dissection, the destruction of Skene's glands by means of a fine wire cautery and cauterization of the mucous membrane of the cervix with evacuation of cysts if present, are minor operations that are followed by most gratifying results. Experience would indicate that too little attention is given to this phase of our subject. This is true, especially when more serious conditions exist above which necessitate radical surgical treatment. Too often after major gynecological operations does the patient continue to have an irritating vaginal discharge which persists because of oversight or failure to appreciate its importance at the time of operation. A chronic backache may persist on account of a deep-seated cervicitis with its associated inflammation in the lymphatics of the sacro-uterine ligaments.

It can safely be said that not enough attention has been given to the operative treatment of some of these minor lesions and that minor operations of this character have not been too much the vogue.

After cauterization of the cervix it is important that the patient be under observation until all danger of permanent contraction has passed. The passing of a sound or small dilator into the canal at intervals of two or three weeks for a time will prevent stenosis when more extensive cauterization has been done. The cause of such a discharge, when not dependent upon infection in or below the cervix, usually depends upon infection which lies deeper than the endometrium. Under these circumstances, removal of the fallopian tubes and sometimes all or part of the uterus is necessary to effect a cure.

Since the days of Emmett the question of repair of the perineum and cervix has received much attention. It would seem that this subject should be satisfactorily closed, after all that has been said and written about it. We are led to believe that there are some questions which concern the repair of the perineum and posterior vaginal wall which remain undecided both as to method and time when it should be undertaken. This applies equally to the cervix. Physicians are inclined to doubt the wisdom of a repair of the perineum, when the laceration is incomplete, during the active child-bearing period, because of the danger of recurrence of this accident. Every one understands at present that an attempt should be made to repair all lacerations immediately, or soon after delivery. In the most skillful hands it may not succeed, owing to circumstances over which we have no control, and secondary repair becomes necessary in many instances. When the tear is complete the great inconvenience and discomfort of the patient leads to operation soon, but when it stops at the sphincter, symptoms are not urgent and the patient becomes accustomed to the milder effects. Constipation, backache and a feeling of loss of support are tolerated without complaint. Our experience leads to the belief that a perineorrhaphy that is performed with an appreciation of the anatomical relationship is necessary when indicated—after the first delivery or any succeeding one. If this is not done, wide separation of the fascia and muscles finally ensues, which makes it difficult and sometimes impossible ever to secure a satisfactory repair. In performing this operation during the child-bearing period the anatomy of the perineum with particular attention to the relationship of the levator muscles should always be considered. If too much of the levator muscles and fascia are brought together and closed between the vagina and rectum a bridge may be formed which is certain to be torn at a succeeding delivery. This is not so important later in life, and such a method may become necessary on account of the absence of fascia or muscular tissue which form the natural supports under normal conditions. It should be kept in mind that plastic surgery which does not reconstruct along anatomical lines is unsatisfactory. It is for this reason that repair should not be too long postponed. There is much to be learned from a correct knowledge of the teaching of Emmett.

The problem of how injuries to the cervix shall be treated is also difficult. The ease with which a trachelorrhaphy or amputation may be done leads to surgical treatment when conservative methods might be more satisfactory. This applies, of course, mainly to active child-bearing life before the age of forty. The symptoms that arise from pathological disturbance of the cervix are not directly due to laceration, but to infection, and if they are to be relieved this infection must be destroyed. If specific in origin, as it often is, it means a complete removal of the cervix with its mucous membrane. This is true particularly where the infection is deep-seated, with cyst formation and fibrous change. Such conditions are treated much more satisfactorily by means of the cautery. Some deformity and a moderate amount of scar tissue is of little significance in a cervix that is not inflamed and irritated. Often if operative repair is necessary this is the best form of preparatory treatment.

When pregnancy is not likely to recur and especially as the woman approaches the age of forty, too much cannot be said in favor of a healthy cervix. At this time it is of extreme importance that all diseased tissue be removed. It is quite apparent that radical measures are not done sufficiently often at this time. It is the duty of the physician to impress upon his patients the urgent necessity of a healthy cervix as this period is approached, as it is our only known means of preventing cancer of the cervix. The one convincing proof of this is that cancer is seldom seen in a woman who has not borne children or in a cervix previously in normal condition.

Much may be said in favor of the proper care of the cervix after delivery. In nonspecific cases a moderate degree of laceration with mild infection may be so treated that healing takes place without extension. There is a responsibility here that has been overlooked. In nearly all primiparous labors there is laceration of the cervix to some degree. In over 50% of the cases healing takes place without much deformity. In a large percentage, especially when the laceration is extensive, the healing process is slow and is prevented or delayed on account of infection. If neglected it may result in an erosion or it may extend into the glands of the cervix and cause chronic inflammatory change with formation of scar tissue and cysts. If the laceration is extensive it should be repaired ten or twelve days after delivery. If done at this time it is very simple because the edges of the torn surface can be approximated with little difficulty and healing follows. Where the laceration is not extensive or where there is some erosion and eversion of the mucous membrane of the cervix some local treatment may stimulate the healing process and prevent the development of a chronic change which later necessitates the employment of radical measures.

In the treatment of cystocele it is necessary to emphasize the importance of securing support other than that of the vaginal mucous membrane. When there is sufficient fascia a most satisfactory result may be obtained by freeing the bladder wall, pushing it well up, and closing the fascia beneath.

Under stimulation of both foreign and American operators, the interposition operation, so well known in our country as the Watkins operation, has grown most popular. In some clinics it seems to be employed almost entirely, not only for the treatment of cystocele but as a general procedure for the cure of prolapse of the uterus. In our judgment this operation should be used in the cure of prolapse only when cystocele is the most prominent feature; when the cervix is not displaced downward to a marked degree, unless it can be held in its posterior position by shortening the sacro-uterine ligaments, where the uterus is small and when the postpubic attachments of the urethra are not destroyed. It is never to be employed when there is marked eversion of the vaginal walls. We believe that it is a valuable operation when indicated but that failure may follow its use unless careful consideration is given to these fundamental principles. Our impression is that it will be employed less often in the future. Sufficient stress has not been placed upon the contra-indications by those who are enthusiastic supporters of the method. A more radical procedure is preferable if there is danger of failure to cure the displacement.

In vesicovaginal fistula where the opening lies in or about the cervix much time may be saved and the patient spared additional distress and expense by closing the fistula from above through an abdominal incision. By this method success is at once attained where failure frequently follows attempts to close it through the vagina below.

The operation of shortening the round ligaments for backward displacement of the uterus has been widely employed. The Gillian operation and its many modifications has been most popular and is perhaps the most successful. When rightly employed under the proper indications it is an operation of great merit, especially when done as an aid to other measures. On the other hand it may be of little value in patients having poor muscle tone secondary to toxemia, or infection, and under these conditions should not be employed until the normal muscular tone has been restored. The use of a pessary temporarily, with proper attention and treatment directed along general lines, may lead to cure without operation. This is true especially following delivery and too much emphasis cannot be placed upon the great responsibility of the one who has the care of the patient at this time. He cannot function properly unless his conception is sufficiently broad to enable him to see above the brim of the pelvis. It is apparent that too much attention has been given to the technique of this operation and too little consideration to the many causes which have made it a necessity. Not infrequently do we see patients upon whom such an operation has been advised, where careful study reveals subinvolution, marked absence of muscle tone secondary to infection, toxemia or general depletion, the result of poor toleration of the toxins of pregnancy. One frequently predisposes to or aggravates the other.

In this review one is impressed with our responsibilities as physicians in the way of prevention. Here as in other fields we have grown accustomed to the treatment of disease in its advanced stage. The wonderful progress made in surgery and the opportunities which lie in its further development have contributed to neglect in the treatment of some of these conditions in the early stage. Not enough attention has been given to the effect of infection of mild degree which so often follows injuries to the genital tract at the time of delivery. Physicians have not had as keen an appreciation of the necessity for after-care of the parturient woman as could be desired. The proper attention to the general health of the patient with careful consideration of local conditions would obviate the necessity for amputation of the cervix and shortening the round ligaments in many instances. In our present stage of development many women tolerate pregnancy poorly. The degree of anemia, the weakness and slow return of strength all indicate strongly that the patient has been through a hard struggle and while it is so commonly looked upon as a simple physiological excursion it is more than that. We must not be unmindful of the fact that the patient may be struggling under additional handicaps, as for example, an infected gall-bladder, infected teeth or tonsils. Oftentimes a pyelitis has placed an additional burden upon the patient throughout pregnancy. It is easy to understand how under such conditions a laceration of the cervix, with everything favoring infection, may lead to a cervicitis with secondary invasion into the body of the uterus. The lymphatics offer an open road. The increased weight of the uterus and absence of strength on the part of the uterine ligaments leads straight to retroversion. It is at this stage that there is need of intelligent diagnosis and treatment. Proper care at this time may prevent the necessity for many operations later. The people should be educated that with our present state of development comes many handicaps. Woman at best is one of our most complicated problems, and the stress of modern life with its many physical handicaps calls for most careful study. It is just as difficult to treat developmental defects in the pelvic organs as it is in other parts of the body. We cannot install a new sympathetic nervous system and surgery will not benefit unless it is applied with definite indications and correct understanding. The public should be taught that certain accidents and risks attend pregnancy and childbirth, that it is not necessarily a reflection upon the attending physician when lacerations occur, and that infection is not always preventable under the best of circumstances and in the most expert hands.

This brief discussion leads to the conclusion that one engaged in the specialty of gynecology or obstetrics should be trained in the groundwork of medicine. This means a long journey, but it is the only safe way. The specialist of the future will be compelled to atone for the sins of the present. These besetting sins consist in the frantic effort to short circuit and hasten to success without first having laid a sure foundation and then advancing step by step. This is all reflected in our present medical conditions. Graduates in medicine now do not care to go into the country for practice. This is because medical education at present has a tendency to destroy self-confidence and initiative. They do not know how it will be possible to get along without laboratory aids and hospital facilities. If they remain in cities, too often do they at once attempt to evade the hardships, and one of these is the practice of obstetrics. There is no better training in medicine than a few years spent in the practice of obstetrics. It develops courage and self-reliance and gives a knowledge of life and people that can be acquired in no other way. At present, there is no reason why the general practitioner cannot secure good training and why in his early years it will not also be a helpful source of income. We have not yet arrived at the place where all obstetrics should be done by the midwife and specialist. It should be the aim and province of the latter to be an expert consultant and well equipped to meet all emergencies. Our dispensaries should be so organized that ample opportunity will be given those who may desire postgraduate instruction in the principles of gynecology and obstetrics, and by that I mean diagnosis. In this way knowledge may be acquired, not only of the normal which is most necessary, but a better understanding of the conditions which have formed the subject under discussion. There are not enough opportunities in our country for postgraduate study in the basic principles of medicine. If we continue to advance, those who control the disposition of the material in large clinics must accept this responsibility. In turn it becomes incumbent upon those who have the responsibility of training students constantly to impress upon them the necessity for such instruction in the early years of practice.

DISCUSSION

Dr. Harvey Smith (Harrisburg, Pa.): Dr. Cullen's résumé of some of his surgical problems during the past thirty-three years has been very interesting and instructive. While he was harking back to his intern days he carried me along about twenty-five years, when as an intern in Philadelphia it was my good fortune to be thrown in intimate contact with Dr. Montgomery. I recall how strongly I was impressed by the dexterity with which Dr. Montgomery handled a type of pelvic infections familiar to all, where intestines, omentum and inflammatory exudates form a conglomerate mass of pelvic pathology. I rather timidly asked what guiding principle he followed in these cases. He said: "Seek ye first the fundus of the uterus, and the tubes and ovaries shall be added unto you." This method of attack frequently makes difficult cases easy. In this same type of case the sigmoid is occasionally injured. If there is any doubt on this point, inject some water into the bowel while the sigmoid and rectum are in full view. This procedure has been useful to me in two cases in showing up previously unrecognized injury to the bowel.

Dr. Anspach has presented some of the interesting and unsolved problems of pelvic physiology and surgery. I believe as he does that conservative surgery should be practiced when indicated and when possible. There are however, as mentioned by Dr. Anspach, the factors of age, nervous stability and equilibrium, social status, type and character of pelvic lesion, which makes it impracticable to lay down dogmatic lines of surgical procedure. The surgeon who removes uterus and ovaries takes a responsibility which should not be assumed lightly. And after all, satisfactory end results after abdominal section for pelvic diseases depend upon good judgment and an intimate knowledge of the principles discussed in these papers.

Dr. Elmer Hess (Erie, Pa.): It is with some misgivings that I undertake to discuss three such masterpieces as those we have listened to this afternoon, not only because of my youth, but because I am not a gynecologist. I am a urologist, and am forced to face gynecological problems because of my association with general surgeons who, outside of Pittsburgh and Philadelphia, do two-thirds of the gynecology of the state, if not of the country. A complete urological examination is an essential part of a complete gynecological examination. I have been very much interested in the speakers' pleas for conservative surgery. I think that holds good in almost any branch of medicine to-day. I think we are doing too much surgery. The pathologist in one of the hospitals at home tells me a large percentage of the specimens that come to the laboratory are frequently normal and he has, as the result of experience there, taken out fewer tubes and ovaries in the last few years. He is also one of the surgeons there.

I think we have enough surgeons. We have come to the acme of surgical perfection I think as far as technique is concerned. What we want is not more surgeons, but better surgeons and although a man has a license to practice medicine and surgery, that by no manner of means makes him a surgeon.

I was interested in Dr. Cullen's talk on pathology. After all, that is the basis of all surgery, whether pelvic, renal, abdominal or thoracic. The danger of injury to the ureter is a very grave problem in the enormous surgical procedures that are sometimes necessary in the female pelvis. I was interested in hearing him say that gentle traction and blunt dissection would save many a ureter that otherwise would be tied off and cut during the Wertheim operation, or some other procedure of magnitude.

I should like to ask, regarding the advisability of placing catheters in ureters prior to operation and particularly in cases of carcinoma, whether the injury done by the catheter has any influence on the spread of the carcinoma? We urologists do two-stage operations; I think we lead the field in doing them, and I don't believe that they are bad surgery. I want all the anatomy I have as long as I can possibly keep it and I think every woman should have all the anatomy she can keep. I believe that oftentimes in an ovary that looks beyond repair, if you take the active focus of infection out, the surrounding inflammatory exudate will sometimes resolve and leave a perfectly good organ.

There is one thing I should like to call to the attention of the gynecologist that I find in my work with general surgeons we often miss; that is, the gynecological picture represented by frequency, urgency and straining. We put the cystoscope in the bladder and cannot see a thing; we examine the specimen of urine but it does not seem abnormal enough to cause the frequency and urgency of urination, but if we look into the urethra with an open urethroscope, we will find it filled with granulation tissue, the tail end evidence of old gonococcic infection, that a few dilatations and the local application of the solid stick of silver will soon relieve.

Dr. John G. Clark (Philadelphia, Pa.): As we have heard Dr. Cullen's address in which he has described several instances in which he has gotten out of very difficult places by breaking a new path, I could not help but think of the fallacy of adhering to a "rule of thumb" either in medicine or surgery; for while in general it may be good, it will occasionally prove disastrous unless ingenuity comes to the aid of the physician or surgeon, in such an emergency. A few years ago I stood by the operating table of a skillful surgeon with my friend, Dr. Watkins, of Chicago. In performing a nephrectomy the surgeon was having great difficulty in delivering the kidney. I remarked to Dr. Watkins that I was sure he would have a much easier time if he would only start to deliver the kidney by the upper rather than the lower pole. In reply, Dr. Watkins said that my suggestion reminded him of the story of two settlers on the wide plains of the West who were suddenly charged by a bull buffalo and as they had no weapons of defense they were compelled to run. There was a small tree in the immediate foreground, and the one who sprinted the faster gained this refuge. Just as the bull buffalo was on the point of ramming the second one, he espied a hole in the ground and without any ceremony whatever dived into it. The buffalo just grazed him as he escaped. However, he immediately jumped out of the hole and the buffalo returned to his charge, and thus matters went on with the man in and out of this place of refuge, the buffalo charging each time he reappeared. The fellow who was quite safe up the tree called down to his friend and said, "It strikes me that you are somewhat of a fool. Why don't you stay in the hole?" His companion replied, "You are the fool up a tree. You do not understand conditions down here. There is a bear in the hole."

When we offer criticisms in witnessing another man's difficulties in an unusual operation conditions are somewhat analogous. It is easy to sit in a comfortable position as a spectator when you are not carrying the responsibility and offer suggestions to the other fellow as to how he can obviate his troubles. The instances, therefore, which Dr. Cullen has related demonstrate vividly the necessity for the surgeon to possess ingenuity if disaster is to be averted in an occasional critical situation.

I have listened with much interest to my former associate, who again reiterates so strongly the necessity for the conservation of the ovaries, particularly in young women. If the circulation is preserved and the position of the ovary is satisfactory for proper functioning, there will be few or no postoperative sequellæ, and I am convinced, through the observation of two series of comparative cases which we have traced very carefully, that unquestionably those in which the ovary has been conserved fare much better. However, in the densely inflammatory cases where the ovaries are already seriously damaged, it is our rule to forego any thought of preservation of these organs, for a badly mutilated organ does not lend itself to successful conservatism. In those very difficult cases in which the ovaries, uterus and tubes are buried in a mass of adhesions, and it is almost impossible without the gravest dangers to perform the ordinary hysterectomy, I have found that exceedingly ingenious bisection method devised by Dr. Kelly to be of inestimable value, since many times it converts an impossible situation into a relatively easy one to master. In our experience we have not found this operation to be attended with any more danger than the ordinary hysterectomy. Indeed it is much safer since the hazards of injuries to surrounding viscera are reduced to a minimum.

In this question of conservatism I would especially draw attention to a very valuable observation made by my associate, Dr. Charles C. Norris, in the compiling of statistics relative to menopausal symptoms in women in whom the ovarian function has been abrogated either through operative or irradiation means. Previous to these observations we assumed that the nearer the patient was to her menopause, the more physiologic this event. This does not, however, obtain in all cases. In the relatively young women of phlegmatic temperament artificially induced menopausal symptoms may be almost negative, whereas in the highly nervous individual even at fifty years of age a profound climatic neurosis may ensue. In general, however, the old rule holds good. Among a large group of younger women there will be a greater proportion who will suffer very acute menopausal symptoms than in those approaching the change of life. However, there are many exceptions to the rule, and for this reason the nervous stability of the patient is of paramount consideration when deciding for or against the ablation of the ovarian function. The greatest advance in the conservative movement was first championed in this city by Dr. Frank Simpson who so strongly insisted on the necessity for subsidence of the acute pelvic inflammatory state before any operative measure is instituted. Through this wise forbearance in surgical zeal many an ovary may be conserved which was formerly sacrificed when an operation was undertaken during the acute infectious process.

Dr. William L. Estes, Jr. (Bethlehem, Pa.): Personally, I have been very much interested in the various phases of this symposium. I was particularly struck by one illustration Dr. Cullen showed in which after removal of a portion of the fallopian tube in tubal pregnancy he implanted the remaining tip into the horn of the uterus, and normal pregnancy followed. We have been practicing in our clinic since 1905, following, in an operation in which both tubes have to be sacrificed and one or both ovaries retained, an implantation of a portion of an ovary to the horn of the uterus, not only to maintain menstruation, but to give, if possible, the opportunity for pregnancy.

We have just recently reviewed our cases. Unfortunately, to date we have been able to trace but 28. We have performed this operation on between 90 and 100. In these 28, 5 have become pregnant, 2 have had full-term living normal babies, 2 miscarried and a third is now about six or seven months pregnant. The only difficulty about the operation is that menstruation in a few of the older individuals, after 35 or 40 years, may not always be preserved. Also in two or three cases we have had to operate because we have cystic degeneration of the remaining ovary. I will crave your indulgence; I should like to show a slide of this operation.

(Dr. Estes then presented lantern slides of the operation).

Dr. Cullen (in closing): I can fully agree with Dr. Smith as to the great difficulty in dealing with those pelvic infections where everything is tied up in one mass, and I have sympathy for the man Dr. Clark referred to as being in a hole.

Let me tell you of two most trying operative complications which I have already referred to at length in the Myoma book.

Case 1 was a woman who had a small uterus studded with myomata and posteriorly there were some adhesions. I decided to leave the uterus as the patient was near the menopause. On account of bleeding from the pelvic floor I found it necessary to drain from below.

When the assistant pushed up the Kelly clamp from below he pushed it up anterior to the cervix. I asked him if he was in the vagina and he assured me he was. Finally the end of the forceps presented just behind the cervix and I cut down upon it. A little clear fluid escaped and I remarked that the vagina had not been carefully wiped out during the preliminary cleansing. Two three-inch pieces of gauze were drawn down through the pelvis from above and the assistant was left to close the abdomen while I made rounds.

I was hurriedly sent for and found the two drains emerging from the urethra. The assistant had passed the Kelly forceps through the urethra and had carried the bladder around through the broad ligament until it presented behind the cervix. The clear fluid I noted on cutting down on the forceps was urine.

I at once opened the abdomen, cut the drain off flush with the pelvic floor and then from below had the drain pulled out through the urethra. The ureters were now dissected out. A complete hysterectomy was done and the hole in the base of the bladder closed. The ureters fortunately had not been injured. On the left side there were two ureters.

The patient made a prompt recovery and was back at work in six weeks.

Case 2. A number of years later after removal of a densely adherent ovarian cyst it was necessary to drain the pelvis on account of the fine capillary ooze.

The assistant who pushed the Kelly forceps up from below, was twice asked if the forceps were in the vagina and each time answered in the affirmative. Two drains were laid in the pelvis and their ends brought out from below.

The operation was done late on the afternoon of December 31st, and my first message on January 1st was that the ends of the gauze were emerging from the anus. The assistant had carried his forceps up through the rectum instead of through the vagina.

I at once opened the abdomen, cut the gauze off flush with the pelvic floor and then drew the drains out from below.

The opening in the rectal peritoneum was two inches higher in the bowel than the opening in the rectal mucosa. This was due to the forceps pushing up the mucosa when it was introduced and cut down upon at the time of operation.

With one finger in the rectum I engaged the hole in the mucosa, slid it up until it was opposite the hole in the peritoneum and then with a linen thread I closed the hole from above with a purse string suture, catching peritoneum and submucosa. I then carefully washed up, put on fresh gloves and from above covered over the purse string suture by two or three others, these latter sutures going through only the peritoneum and outer coats of the bowel.

The patient promptly recovered.

I, formerly, occasionally catheterized the ureters when operating for cancer of the cervix, but we gave up this procedure. Just as soon as the round ligaments are tied and cut and the ovarian vessels have been ligated and severed, we isolate the ureters and place a small piece of tape around them, thus at any step of the operation they can at once be located.

I want to congratulate the Chairman, Dr. Estes, on the ingenious operation he and his father have been employing. Their results show clearly that it has a definite sphere of usefulness.

In conclusion I wish to express my thanks to the Pennsylvania State Society for their invitation to be with them on this pleasant and interesting occasion.

(SYMPOSIUM ON PELVIC SURGERY concluded in the August number.)

SURGICAL RECONSTRUCTION OF THE NOSE*

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PHILADELPHIA, PA.

Surgical reconstruction of the nose embraces all operations devised for the correction of deformities, acquired or congenital, including the complete construction of a new external nose.

Since it would be impossible in the time allotted to cover all phases of nasal reconstruction, we will limit our discussion to the methods of constructing a complete external nose.

A large proportion of the cases presenting themselves for total rhinoplasty are syphilitics. The syphilis must not only be under control before any operative procedure is attempted, but mercury and iodids must be continued during the entire reconstruction period, even though the Wassermann be negative.

It is essential that the patient and the surgeon have a complete understanding of the problem on hand before any operation is advised, as too frequently the patient and his friends expect the new nose to equal or surpass the original in appearance. We are unable, unfortunately, to achieve this end and disappointment is the rule, unless a definite understanding has been reached.

While unquestionably the late war was responsible for standardizing the technic of rhinoplasty, yet the use of the skin flaps is as old as civilization itself.

The tilemaker's cast in India obtained splendid results with both free and pedunculated flaps in partial nasal reconstruction and to them we owe the method made popular by Keegan, the so-called Indian method.

Celsus, the Latin physician living in the time of Augustus, unquestionably knew many of the principles of plastic surgery. Nevertheless, many of these principles had to be rediscovered in the present century. Brancus of Sicily in 1442 constructed a nose from pedunculated flaps obtained from the cheek, and his son, Antonius, obtained a flap from the forearm to repair a defect in the tip of the nose. Tagliacozzi, in 1597, published the first book on plastic surgery. He laid particular stress on the methods of obtaining skin flaps from the forearm and this method, known as the Italian method, has been accredited to him by many authors. The first record of the Indian method being used in Europe was in 1814 when J. C. Carpue reported a successful construction of a nose by this method.

The so-called French method of using the gliding facial flaps in constructing a nose, while mentioned by Celsus in 1478, is frequently accredited to Buisson, Larry and Diffenback.

It will be noted that in all rhinoplastic operations at this time, no supporting structure was used. The nose was merely a skin nose. In 1899 Van Gold first suggested the use of cartilage as a support in nasal reconstruction. Nealton was the first to embed the cartilage under the pericranium in a total rhinoplasty. Von Hacker used the outer table of the skull to support his flap, while Israel obtained support for his arm flap by means of a triangular piece of bone obtained from the ulna. Free bone transplants have been frequently tried, but experience has shown that unless the bone is in direct contact with living bone, it will undergo atrophy. As this is a very difficult procedure in the majority of cases, the use of bone is limited as a support. Foreign bodies such as ivory, gold, platinum, aluminum and so forth have all been tried but experience has shown that they are usually extruded. We consider the use of cartilage as the only justifiable nasal support in complete rhinoplasty. The next most important factor in nasal reconstruction is the lining of the flap with epithelial tissue. The credit for the use of cartilage belongs to Van Gold, and the importance of the epithelial lining of the flap was first pointed out by Keegan, although Gillies of England, has done much to correct details and to demonstrate the importance of the epithelial lining.

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*Read before the General Meeting of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 4, 1923.

Coughlin, of St. Louis, places his supporting cartilage between the skin and the pericranium before raising the flap. He claims that by this procedure, there is less tendency to infection and in selective cases, it is only necessary to line the lower third of the flap with skin or mucous membrane.

Dr. Dorrance and I have recently described a method which we feel has solved the problem of nasal support. We refer to this operation as the peak roof method, the details of which will be given later in this paper.

The accepted methods of total rhinoplasty as practiced to-day are the Indian, French, Italian, pull down operation and the tubed pedicle flap from the neck.

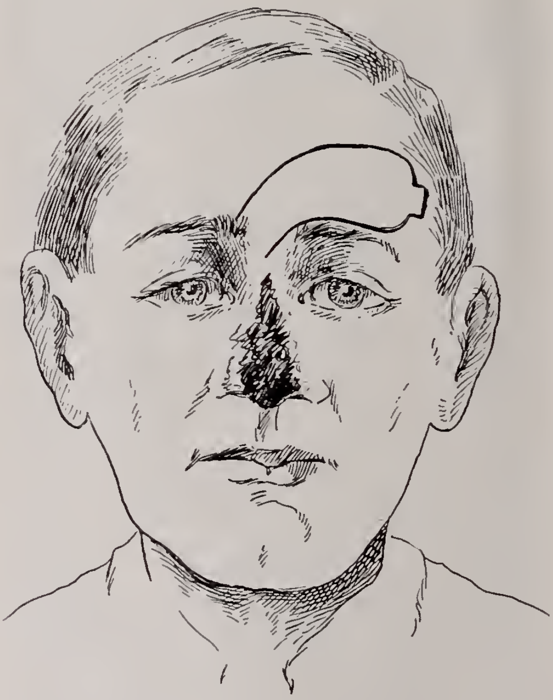

Fig. I. The Indian Method.

Indian Method: The flap is taken from the forehead and brought into position by twisting the pedicle at an angle varying from 130 to 175 degrees. The bood supply is obtained through the angular artery. The pedicle may or may not be subsequently divided. Numerous ingenious modifications in shaping the flap to obtain alæ and columellæ have been made from time to time by various operators. At times, it is necessary, where we wish to correct a defect in the cheek while construction of a nose is in progress, to utilize a longer pedicle in making a flap from the forehead. In this case, we outline the flap so as to obtain our blood supply through the temporal artery. The forehead flaps contain several advantages over flaps obtained from other areas. Their color remains the same as the rest of the face; they are more rigid, due to the pericranium; there is less shrinkage and due to their copious blood supply, they rarely slough unless crossed by a scar. These forehead flaps do not take on fat as flaps taken from other areas are prone to do. It is the easiest of all methods and the resulting scar objected to by so many operators is very slight, if one is careful to undermine the surrounding edges of the wound before attempting closure. If the wound edges cannot be approximated by simple undermining, a semicircular incision through the scalp within the hair line will permit the closure of practically all wounds. Naturally, this will bring the hair line lower.

If these two procedures fail, Wolfe grafts are always available and will frequently prove successful under proper technic. In every case, a model of the nose to be constructed should be prepared before the operation and with this for a guide, careful measurements of the intended flap should be made. Invariably, beginners make too large a flap. This will not occur if a model has been previously constructed. The question of supporting the flap must be decided early. Most surgeons at the present time insert their cartilage in the area from which the flap is to be raised several weeks before outlining the flap, although it is possible to insert the cartilage after the flap has been brought down. When bone is used as a supporting structure, absolute contact with the bone of the skull must be made, otherwise, the graft will undergo atrophy.

French Method: This method is only of value where the supporting structure has not been destroyed. It is seldom used in a total rhinoplasty and as a matter of fact, it is being used less and less even for covering small defects. The flaps are obtained from the cheek and the scar as a result, in our opinion, makes the operation unjustifiable, especially since a better nose can be obtained by the Indian method.

Italian Method: The Italian method made popular by Tagliacozzi is rarely used at the present time. The risk of the arm or finger being pulled away before the flap has become united is very great; the color of the skin obtained is unsatisfactory; and the strain upon the nervous system of the patient is such as to militate against its use.

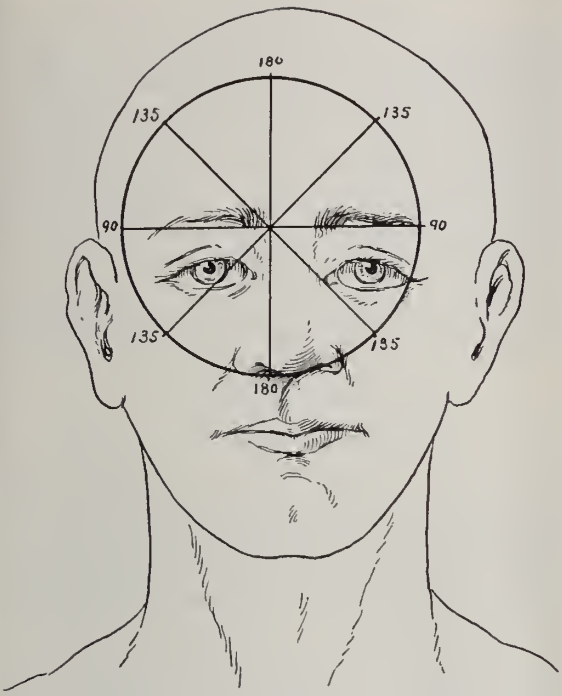

Fig. II. Showing various angles at which flap could be raised.

Davis, in his book on plastic surgery, in discussing the various methods of obtaining flaps for nasal reconstruction states that most surgeons never attempt the Italian method the second time. If this method is used, it is necessary to have a plaster cast made to hold the arm or finger in position. This should be done a week or two before the operation so as to accustom the patient to the position. It has always been a question in our minds why one should use such a complicated procedure when a nose can be constructed by much easier methods. We have never used it but have seen several cases in course of construction and when completed. Theoretically, the pull down operations of Nealton and Ollier are very satisfactory. Practically, they leave rather a poorly shaped nose, the tip of which has a tendency to pull upward. We were tempted into using this method twice in what appeared to be typical cases for this type of operation. The results were very unsatisfactory and we shall never attempt the method again.

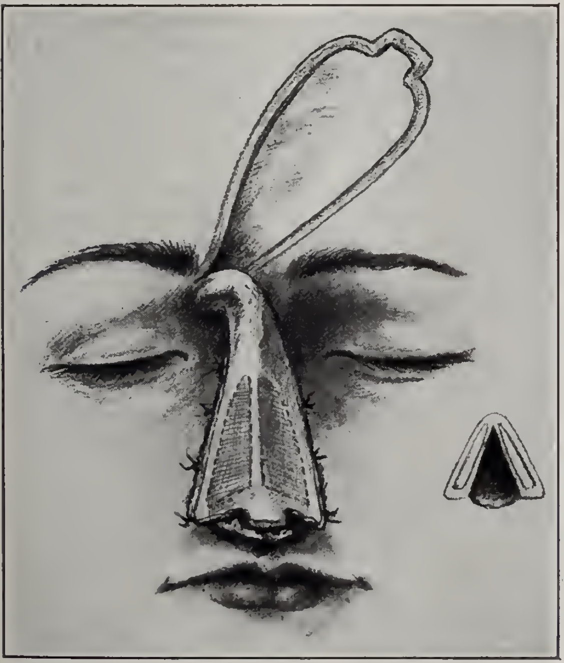

Figure III. Nose held over modeling compound.

The Tube Pedicle Flap From the Neck: This operation is indicated when the tissues of the face and forehead have been destroyed by disease, accident or former operative failures. The consistency of this flap is not equal to that of the forehead; the final color will be a dull white and there is a tendency towards the subsequent deposition of fat in the flap. Successful use of bone obtained from the clavicle has been reported by this method, but I would use cartilage if I found it necessary to use the neck flap. It is essential to know that in using the pedunculated flaps, there will be a contracture of the pedicle from about one-fourth to one-third of its length. The base of the flap is best located over the sternocleidomastoid muscle just back of the angle of the jaw. The pedicle should be tubed for about two to three weeks before the flap is raised. After the successful take, the flap is educated to get along without the circulation obtained through the pedicle by applying construction with a rubber band to the pedicle. We begin to apply pressure about the eighth day. The band is left on for about twenty minutes and increased for about twenty minutes daily until the fourteenth day, when the pedicle is partially divided. Each day subsequently, a little more of the pedicle is cut, until on the eighteenth day, the pedicle is completely divided. The pedicle may or may not be returned to its former bed, as circumstances warrant.

Peak Roof Method: In this method all three essential conditions necessary for complete rhinoplasty are obtained, namely, lateral and vertical cartilaginous support; an epithelial lining; and sufficient breathing space.

The peak roof arrangement of the cartilage gives a nearer approach to a true anatomical reconstruction of a nose than any of the other methods we are familiar with.

The use of a single broad piece of cartilage for support will give excellent results but the tip of the nose will invariably drop, producing not only a deformity but infringing greatly on the air space.

A study of the normal nose shows the nasal bones at the root to be arranged in this peak roof fashion. The several small lateral cartilages in the anterior two-thirds of the nose have the same arrangement. They are supported in the center by the cartilaginous septum.

TECHNIC OF OPERATION: The typical Indian flap is used. The size of the nose to be built is determined and a model is constructed of modeling clay. After careful measurement, the flap is outlined but only the extreme end is actually cut at the first operation. This is shown in the illustration. The incision is made down to but not including the pericranium and two triangular pieces of cartilage (previously obtained from the seventh rib and prepared so as to be about 1½ c.m. wide at the base and graduated down to ¼ c.m. at the tip, the length depending on the size of the nose, the thickness being about one-half that of the normal rib cartilage) are inserted about a distance of ½ c.m. in separate pockets prepared by undermining a space between the pericranium and skin. The incision is closed. After six to eight weeks, the flap is outlined and brought down over a model vulcanite or modeling compound. The edges of the cheeks where the nose is to be attached are freshened up but the sutures are not placed until the lining of the nose is placed over the model.

The lining consists of a Thiersch graft placed with the skin surface on the model so that the raw surface will come in contact with the raw pericranium. The flap is now sutured in place. The lower portion which is to form the columella is not sutured, so as to permit removal of the model after the graft has taken. This occurs, as a rule, in 10 to 14 days.

After the model has been removed, the columella is sutured in place. Several minor operations, under local anesthesia, are necessary to give the proper shaping to the nose at the alæ and columella. The pedicle should not be cut for at least two months and then a little at a time, carefully observing the effect on the color of the new nose.

As a rule, it will be necessary to make alterations in the alæ so as to obtain the natural curve. This is done under local anesthesia.

In some cases it is possible to obtain our skin lining by turning in surrounding tissue, in which case we need not use the skin graft.

In several cases, it was necessary to drop the upper lip a distance of ⅜ to ½ inch, as it had contracted upward, exposing the gum margin. This was done by freeing its attachment to the nasal spine by undermining from the oral side. We have encountered the contracted upper lip in syphilitic cases only.

DISCUSSION

DR. GEORGE M. DORRANCE (Philadelphia, Pa.): Dr. Bransfield mentioned, but did not emphasize, the difficulties and dangers of using foreign bodies such as aluminum, dry bone, etc., for nasal supports. I agree with him that cartilage is the supporting structure of choice and we agree that the peak roof arrangement offers a most desirable support. I will show with a series of lantern slides just how the cartilage is cut and arranged to produce an effect approaching the normal arrangement of the cartilage.

RECURRENT HEMORRHAGE INTO THE RETINA AND VITREOUS OF YOUNG PERSONS*

LEONARD G. REDDING, M.D.
SCRANTON, PA.

Although this condition was first described by Von Graefe in 1854 and has been generally recognized since that time, there has been little advance made concerning the etiology or treatment. That this is not due to neglect or indifference is shown by the fact that in the last three years, there are found in the literature twenty-six different papers on this subject. The most noteworthy are the papers of Zentmayer[1] and Finoff.[2] There are nearly as many different causes given as there are authors. The older writers give as causes constipation, oxaluria, phosphaturia, gout and syphilis. Noll,[3] in 1908, was the first to suggest tuberculosis as a cause, and since that time, this has been the most generally accepted one. My own studies were made on a series of three cases in the last three years.

CASE NUMBER ONE

Referred to me by Dr. R. G., October, 1920. Male. Age 26. Professional ball player. Well nourished. Five feet eleven inches in height. Weight 145 pounds. Present trouble began twenty-four hours prior to observation, when he suddenly went blind in the right eye. Family history negative. Past history negative except for this condition. He had his first hemorrhage five years ago and consulted several ophthalmologists in Chicago, Boston, New York and St. Louis, all of whom gave him very thorough and exhaustive examinations, including Wassermann, tuberculin, etc. Examination at this time showed the right eye to be entirely filled with blood and it was impossible to see into the media. The left eye was normal. This hemorrhage took about three weeks to clear up entirely, and he was then apparently well for about six months, when he again went through the same experience. In all he had eleven different hemorrhages, his vision becoming somewhat poorer after each attack. When his last hemorrhage, the one for which I treated him, had cleared up, his vision was 20/30 in the affected eye, with some slight cloudiness of vitreous, and a patch of retinitis proliferans in the region of the macula. General physical examination did not reveal any pathological condition except that there was some congestion of the mucous membrane of the superior and inferior turbinates of both sides. X-ray examination of the sinuses was negative. In the hope that some cause could be found, I referred him to a rhinologist, with the request that the ethmoids and sphenoids be opened. This was done and it was found that the sinuses of both sides were filled with polypoid masses and some pus. While operating upon him he had a hemorrhage in the eye, which took about two weeks to clear up. At the end of one month the eye had entirely cleared up and the vision was 20/16, but the retinitis proliferans still remained. At the end of one year that too had disappeared and the patient has remained entirely free from trouble of any kind since, being actively engaged in playing ball in one of the leading leagues of the country.

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*Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 2, 1923.

CASE NUMBER TWO

Male. Age 30. Referred to me by Dr. D., January, 1921. Machinist. Well nourished. Weight 150 pounds. While lifting a heavy object the day before, he felt that the vision had suddenly left the right eye, and he was able only to distinguish light from dark. He has had three similar attacks in the past six years. Family history negative. Past personal history negative except that he had influenza about six years ago, and at that time suffered severely from pains in the head. Examination showed vitreous entirely filled with blood; fundus details could not be seen. Physical examination was negative. Wassermann, tuberculin and x-ray examination negative. On account of the influenza previous to the attack of the hemorrhage, and the history of severe pains in the head at that time, I felt that he might have some sinus trouble and referred him to a rhinologist, who opened the ethmoids and sphenoids, and found considerable pus in them both on the right side. This hemorrhage cleared up in about three weeks and the vision was 20/20. There were no changes in the vitreous or retina, and he has had no eye symptoms since.

CASE NUMBER THREE

Referred to me by Dr. S., June, 1921. Chauffeur. Age 29. While driving, he felt vision of the left eye was blurred. When I first saw him the vitreous was entirely filled with blood. No red reflex; could not see any fundus details. Well nourished male. Height, five feet ten inches. Weight, 150 pounds. Never had had any severe illnesses, but was subject to "colds in the head." Had an attack similar to this two years ago. This cleared up and his vision was apparently normal afterwards. Family history negative. General physical examination, including x-ray and Wassermann, negative. Referred him to a rhinologist, who, upon opening the sphenoid and ethmoid on that side, found them filled with polyps, thickened mucous membrane and some pus. The hemorrhage cleared up, vision being 20/16, vitreous and retina normal, and he has been free from trouble since.

As has been seen, all three cases were in apparently healthy young men with no signs of constitutional diseases. Two were in the right eye and one in the left. They were all relieved of their symptoms, or at least have remained well for a longer period of time after their treatment, than at any time previously, but it is of course too soon to say that they are entirely cured. Tuberculosis was certainly not a factor in any of these patients, if our present methods of diagnosis are at all efficient. They all had involvement of the ethmoid and sphenoid sinuses, not disclosed by the x-ray. In this connection, it has been my experience that the x-ray is reliable only in the acute stages and that a negative finding is of little or no value in the chronic forms.

In none of these cases was a positive diagnosis of sinus disease possible except by opening them. In a former paper,[4] I advocated opening the sinuses as a diagnostic measure, and since have had it done many times, and as yet have had no reason to regret it. In the hand of a skilled rhinologist there is little if any risk attached to the procedure, and the hoped-for result, if successful, far outweighs any harm that might ensue. As Luedde[5] says, "Clinical experience demonstrates that the radical elimination of focal infections, especially those of the nasopharynx, and the proper treatment of any coexisting constitutional disease will render less and less frequent the indication for the use of tuberculin, either as a diagnostic or therapeutic agent in ophthalmic practice."

SUMMARY AND CONCLUSION

1. Too much stress has been laid upon tuberculosis as a cause of recurrent hemorrhage into the vitreous.

2. Focal infection is entitled to a larger place in the etiology and treatment than has been given it.

3. The ethmoids and sphenoids are the most overlooked sites of focal infection.

4. The only positive diagnosis of sinus involvement is exploratory operation.

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4. Noll: Arch. f. Augenh., LXIII, 1908, 213.
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DISCUSSION

Dr. C. M. HARRIS (Johnstown, Pa.): When asked to discuss Dr. Redding's paper, I demurred, stating that owing to lack of personal observation in cases characterized by recurrent vitreous hemorrhage, my remarks would not do justice to the subject; and I am still of the same opinion.

The few cases coming under my notice (with one exception) have suffered trauma or have had other ocular lesions associated with gross vascular disease. It would seem that competent observers have been able in many patients of mature years properly to ascribe the cause to general angiosclerosis or to localized degeneration of the ocular vessels due to some serious disease such as diabetes, syphilis or nephritis. However, it is apparent that another class of patients between puberty and forty years of age have the affection in a more or less destructive form and here the etiology becomes more obscure. As the essayist intimates, the various constitutional diseases and toxemias, especially tuberculosis, have been suspected as underlying factors. Tuberculin therapy has been used with apparent benefit and in other instances no improvement followed any mode of treatment; including ligation of the carotid.

If the assumption be correct that toxic influences cause vascular degeneration and subsequent hemorrhage, there is no reason why the claims of Dr. Redding should not merit all confidence when more apparent causes have been excluded. It is not uncommon rhinologic experience to find the posterior ethmoids or sphenoids with no demonstrable signs of disease on inspection or by use of the x-ray. I can agree with the Doctor that the ocular disease is of such importance that a competent rhinologist should not hesitate to explore the deeper cells of the nose in a search for focal infection. In this connection it might be well to emphasize the importance of dental investigation.

Reports indicate that males are more frequently affected, that the hemorrhages are commonly unilateral but that the opposite eye frequently becomes involved. The prognosis is very uncertain but I have noted, according to one writer who had collected data on a fairly large group of cases, that about 40% ultimately recovered good vision.

Dr. William C. Posey (Philadelphia, Pa.): O. T., male, age 26 years, was referred to the writer in June of 1920, with the following history. The vision of the left eye was first affected in September of 1918 but gradually cleared after three or four months, when a relapse occurred which was followed by a permanent obscuration of vision in that eye. For some weeks before consultation he had been alarmed by the appearance of a mist and motes before the right eye. He averred that his health had been good, although inquiry elicited that in childhood he had had whooping cough, measles, chickenpox, mumps, scarlet fever and diphtheria, typhoid fever when nine years of age, and influenza complicated by pneumonia in 1918. He had suffered from tonsillitis three or four times a year until he was 21 years of age. Venereal disease was denied. Family history negative.

His occupation was clerical, which gave him opportunity for but little exercise, but his habits were good. He did not drink and smoked moderately. He was not constipated.

Examination revealed a detached retina in the left eye, complete except in the lower nasal quadrant. Details were made out with difficulty on account of dense vitreous haze, but retinal vessels seemed to be markedly dilated and tortuous. The retinal vessels were also somewhat dilated in the right eye and somewhat tortuous, especially the veins, and there were several small rounded hemorrhages in the retina just below the macula. The vitreous was slightly hazy. Vision in the right eye equaled 5/5. There was light perception only in the left eye.

The patient, who appeared to be healthy and of stocky appearance, was admitted to the Howard Hospital for study and treatment. Here extensive tests revealed nothing abnormal except a moderate degree of leucocytosis (Hb. 95%, W. B. C. 20,200, R. B. C. 4,750,000, Poly. 88%, Lymph. 12%). Wassermann and urine were negative. Dr. G. B. Wood pronounced his tonsils and sinuses healthy. The usual eliminative treatment was prescribed, whereupon at the end of 48 hours both eyes, which had been free from irritation upon admission, became the seat of an active iridocyclitis. Atropin was prescribed, hot compresses, etc., and in a week's time both eyes were again white. He was permitted to return to his home in a distant town, with strict injunctions given as to diet, exercise, etc., and the continuance of sodium iodid in moderate doses.

When seen two months later, a marked improvement was noted in each eye, the hemorrhage and vitreous haze having disappeared from the right eye and the retinal vessels were less tortuous, and so much of the vitreous haze had cleared in the left eye that the optic nerve was now visible, and found to be the seat of a new vessel formation. There was also an area of choroidal atrophy the size of the disc, just external to that structure, the retinal detachment having subsided sufficiently to lay bare that part of the fundus. The patient had gained weight and seemed in robust health. A month later he returned, with numerous fresh hemorrhages in the retina of the right eye and fresh vitreous haze; vision equaled 5/7½. On readmission to the hospital, the blood test showed the following: Hb. 70, W. B. C. 29,000, R. B. C. 4,930,000, Poly. 81%, S. N. 13%, S. 4%, T. 2%. Vision returned to normal after several weeks' treatment, the haze of the vitreous clearing and most of the hemorrhage disappearing.

All went well for a period of six months, when he returned with a vision of 5/15 in the right eye, with some fresh hemorrhages. Vision in the left eye had risen to 5/80. Vision became normal after two or three weeks of treatment. Seen three months later, normal vision was found in the right eye but some small vessel formation appeared down and out from the disc. The retinal detachment in the left eye had become more luminous, the details of the fundus could be seen plainly, and now assumed the characteristics of retinitis proliferans. All medicine was discontinued, the patient appearing in good health and apparently gaining in weight.

Eighteen months then elapsed without fresh ocular symptoms, when a month after an attack of influenza, vision in the right eye again failed and he returned to the city. At this time vision equaled 5/12 in the right eye and 3/80 in the left, fresh vitreous haze and hemorrhages being found in each. The patient appeared as usual, in good health and spirits, and examination revealed naught, with the exception of the moderate amount of anemia and leucocytosis previously noted. Sweat baths were prescribed and moderate doses of salicylate of soda (gr. xx daily); locally, heat, atropin and dionin. After four days of this treatment, pain was complained of in the left epigastrium. All internal medicine was stopped and the bowels purged. The pain persisting and increasing in severity and being attended with vomiting, Dr. A. C. Wood was called in consultation, but finding nothing definite to account for the pain, persisted in the treatment which was being carried out. A few hours later the patient gave evidence of collapse and died a short time later without regaining consciousness.

Dr. George E. de Schweinitz (Philadelphia, Pa.): There is no doubt that although the clinical manifestations are similar in most of the cases of this disease, the etiologic factors differ, and tuberculosis unquestionably is frequently a cause of this affection. In such instances, as has been well shown by the papers of Jackson and Finoff, tuberculin therapy is of advantage. My personal experience, if I may be permitted to mention it, has been that the effect of tuberculin is enhanced if at the same time either iodid of potassium or Donovan's solution is administered. A large number of cases are associated with focal infections, but whether such infections are the cause I am not prepared to say. As Dr. Zentmayer has pointed out, recurring retinal hemorrhages may be related to disturbed endocrine function. Some recent observations made by Dr. Perry Pepper and myself indicate that myocardial changes may be present; certainly in one patient this was the only lesion, other than those in the eye, which was found.

ACUTE OTITIS MEDIA AND MASTOID INVOLVEMENT*

JAS. I. McLALLEN, M.D.
PITTSBURGH, PA.

Very little has come out on the anatomy of the ear in advance of the scholarly monograph of George E. Shambaugh, of Chicago, where he says that nowhere is surgery more dependent on a knowledge of anatomic details than in the operations upon the ear. In the temporal bone are located a number of important anatomic structures, a slight injury to which may be followed by serious results. The fact that these structures encroach on the field of operation which lies deep in the temporal bone makes the danger from injury much greater than when the operating is done in soft structures.

The temporal bone is formed from three parts, the pars petrosa, the pars squamosa and the pars tympanica, which in the newborn are sharply separated by well-marked sutures. Of these the petrous is the most important as it contains the labyrinth and it is from the petrous bone that the mastoid process develops. The tympanic bone in the newborn is but a shallow curved rim containing a groove, the sulcus tympanicus, for the attachment of the membrana tympani. The rim is incomplete at the upper pole, the cleft forming the incisura tympanica in which the membrane of Shrapnell is attached. The squamous bone in the newborn forms the outer covering for the recessus epitympanicus (the attic and aditus) as well as the outer covering for the antrum tympanicum. The roof of these chambers, the tegmen tympani et antri, is formed in part from the squamous bone and in part from the petrous. The suture passing directly through the tegmen is quite patulous in the newborn. This explains the ready occurrence in the young of meningeal symptoms in the cases of acute suppuration of the middle ear.

The outer surface of the temporal bone in the newborn presents an appearance quite unlike that seen in the adult. The most conspicuous difference is the complete absence of an osseous external meatus. The membranous meatus is connected to the shallow rim of bone, the pars tympanica, in which the membrana tympani is attached. This close relation between the membrana tympani and the membranous external meatus accounts for the occurrence of pain in a young child whenever in cases of acute otitis media the auricle is manipulated. In older children this symptom disappears because the cartilage of the meatus is separated by a well-developed bony meatus from the area of infiltration about the attachment of the membrana tympani. Another peculiarity in the newborn is the complete absence of a mastoid process. That part of the petrous bone from which the mastoid process develops presents a flat surface with scarcely a suggestion of a prominence from which the process develops. A conspicuous suture beginning opposite the middle of the posterior wall of the tympanum and coursing upward and backward to a notch on the posterior margin of the temporal bone marks the union between the petrous and squamous bones. This suture, the petrosquamosal, opens directly into the antrum tympanicum and often persists in the adult as a depression into which the periosteum penetrates. The persistence of the petrosquamosal suture in children has an important practical bearing on the course of antrum infection at this age, as it permits of the rapid development of the subperiosteal abscess.

In the development of the temporal bone after birth the two conspicuous changes brought about are the formation of a mastoid process and of a bony external canal. The mastoid process develops largely from the petrous bone. It is first recognized as a small tubercle at about the age of one year. Its development takes place in two directions; outward, that is, external to the cavity of the tympanum, and downward below the cavity of the tympanum. It is the development of the mastoid process that causes the stylomastoid foramen to recede from the surface of the temporal bone until in the adult it lies fully 25 mm. from the outer surface of the mastoid. At the age of three years the mastoid has already assumed the shape found in the adult and the digastric groove is easily recognized. The petrosquamosal suture has usually been obliterated with only occasionally a depression marking its site. The external bony covering of the antrum is still usually quite porous.

At birth, there is no real mastoid present, as Julius H. Hess makes mention, but there is a mastoid antrum, which is a large cell communicating with the middle ear by means of the aditus ad antrum. The process of formation of the air cells, or pneumatization process, is from above downward toward the tip of the mastoid process. A fully developed mastoid process is not present before the end of the second year of life, but the pneumatization is not complete as a rule until the fifth or sixth year of life. In some instances we have, as Wittmaak pointed out, so-called arrest of pneumatization, the formation of the air cells not taking place early, or sometimes not occurring at all. However, in the normal mastoid process we can say that beginning with the antrum or the first mastoid cell communicating with the middle ear, we have this process extending downward to the tip, so that in a great many cases we have the mastoid process filled with intercommunicating air spaces.

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In rank of importance I would place the gastro-intestinal disturbances first, respiratory infection second, and acute ear infections third. These are a complication of the contagious diseases, especially measles and scarlet fever, and should always be looked for in such cases. But the remarkable thing is that not more than 2% of otitis medias develop an operative mastoid.

The pediatrist is the man who sees the early manifestation because of the routine ear examination, and often sees redness in the ear drum before the baby gives a sign, due possibly to lack of pressure from fluid which is bound to be a result of such inflammation. All the following signs are indicative and should lead to examination: as pulling the ear, rolling the head, temperature elevation (which may come from other causes), possible absence of pain, tenderness in front of the ear, sore muscles of the neck with lymph nodes; but the only true diagnostic sign is the reddened or bulging ear drum. Whenever we have rhinitis, pharyngitis, tonsillitis, or any of the contagious diseases, or in pneumonia after the child passed the critical stage and has a sudden rise of temperature, be sure to look at the tympanic membrane and generally you will find a redness of Shrapnell's membrane. While we have to consider the possible infection from the outside, the only safe measure is paracentesis under anesthesia.

The incision should be crescent shaped to prevent immediate closure. Irrigate with warm boric acid solution or normal salt solution. Since the mastoid is involved in practically all these cases, we should find streptococcus, staphylococcus, pneumococcus, Löffler's, or the hemolytic type. But in the face of the facts shown by the best statistics, that less than 2% are operative cases, we should not boast of our great number of mastoid dressings. Mother Nature, with her blood stream able to manufacture antibodies, able to call a reserve army of white blood cells into force, able to create her antitoxins, should be considered before we put the stamp of superiority upon the otologist. Aid nature in preserving the delicate structures by giving free drainage, cleanliness, rest and proper food; then our operative cases will stay under our 2%. According to the anatomy of the child under seven years, the cell formation is very incomplete, and it seems that sometimes the ready chisel becomes a travesty on nature and her handiwork.

Pollitzer, in his textbook, makes mention of removal of tonsils and adenoids as a means of preventing mastoiditis. The lips of the tubal opening are normally closed, and open only during the act of swallowing, when the levator and tensor muscles of the soft palate simultaneously open the tube and admit the amount of air necessary to counterbalance within the middle ear the outside atmospheric pressure working against the drum. Enlarged adenoids and tonsils interfere with the movement of these muscles and prevent the aëration of the middle ear, with a consequent thinning and gradual absorption of the air within the tympanum. A transudation of serum from the strongly filled vessels takes place, into which the bacteria from the usually highly inflamed adenoids are transmitted, and thus gradually suppuration is brought about. This is facilitated by the fact which was first demonstrated by Bezold, that due to the opposition of the tubal walls, the defensive and protective ciliated epithelium becomes destroyed and thereby the invasion of bacteria is made easier. A short survey into the literature will prove that adenoids and tonsils have been recognized as etiologic factors in acute and especially in chronic middle ear suppuration and that their removal has been strongly advocated, partially as a prophylactic against the acute form and also as a cure in the chronic one.

Quoting Fred Whiting, temperature alone is not an indication for mastoidectomy. There is a period preceding the evidences of periostitis when intelligent scrutiny can detect in the meatus convincing evidence of mastoid inflammation, and this period is the time of election for operating. Periosteal swelling, as evident behind the ear, is too late an indication. The period is between the onset of the otitis and the stage of periosteal swelling. There will appear in the meatus reliable signs of beginning mastoid inflammation which careful scrutiny will reveal, and the appearance of these physical signs indicates the most favorable time and condition for operation. Furthermore, it is his belief that the welfare of the patient will not be prejudiced by deferring operative procedures until such changes in the meatus manifest themselves.

The two men that are dangerous in infections of the ear of the infantile patient are the one who is so careful with overcautious and dilatory conservatism that he exposes his patient to the dangers of intracranial inflammation, and the other who will drain an otitis media through the mastoid by operating on many preventable cases.

SUMMARY

1. A working knowledge of the temporal bone and the difference between the adult and the infantile type is necessary.
2. Traction on the external ear in the adult does not give pain when there is an otitis media.
3. Traction on the external ear, with an otitis media, does give pain when the patient is under two years.
4. Less than 2% of the otitis medias develop an operative mastoid.
5. A reddened or bulging tympanic membrane is the only absolute diagnostic sign of otitis media.
6. An early crescent shaped incision of the tympanic membrane under anesthesia, is a preventive treatment for mastoiditis.
7. Removal of tonsils and adenoids are a preventive treatment.
8. The time of election for mastoid operation will be revealed by signs in the external meatus.

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DISCUSSION

Dr. J. Claxton Gittings (Philadelphia, Pa.): The remark that was attributed to Dr. Morse of Boston always seemed to me to be very pertinent. It was to the effect that if a consultant in a case of fever of doubtful origin could not find the cause for the fever in the kidneys, lungs or ears, it was doubtful whether he would be able to make an accurate diagnosis without further study. With the introduction of the electric otoscope many diagnoses of catarrhal otitis media have been made, which satisfactorily explain an otherwise puzzling fever. The ease with which otitis media in infancy develops no one can appreciate who has not inspected ears frequently.

Dr. Henry T. Price (Pittsburgh, Pa.): I think Dr. McLallen's paper is one of the most timely of those presented to this section because of the importance of his subject. Unfortunately ears have been neglected and this practice has continued up to the present time, but there is absolutely no need for it. This error, to my mind, should be corrected, and I feel that any man in practice who does not look at the ears of a child routinely is not the man to do the work. On the other hand, there is a belief that every running ear, or every acute otitis media, is a possible mastoid, and men working along that line do considerable damage. I have seen a number of mastoids operated on which in my opinion were opened unnecessarily; but unfortunately we cannot decide definitely about that point. There is no line of distinction except in the matter of personal judgment. The pediatrician properly trained in ear examination sees many acute cases which never get to the ear specialist and which subside under conservative treatment without operative interference.

It was my good fortune to look over the cases of mastoiditis of a man who had the largest practice in a large city during the winter, three years ago, and also the practice of two or three other men. The one man whom I am sure had the largest practice had at most fifteen cases of otitis media leading to mastoid during that winter. The other group of men had about twenty cases in a week, and this point brings to my mind the matter of personal judgment. We have in surgery, in all branches of medicine, people flocking towards radicalism; but in bringing up this matter I do not wish to emphasize conservatism to the point of avoiding proper treatment of cases that should be operated upon. The discussion brought out to-day I think will help us considerably if we pay attention to the points emphasized.

Dr. J. Clinton Atwell (Butler, Pa.): There seems to be a weak link with the mothers and caretakers of children. Too many mothers have adopted the idea that an earache is a small matter. Over a number of years I have found many mothers who have called me to see an ear, not when the acute symptoms were on but when the ear had already ruptured spontaneously and she had already faced great dangers. There seems to be a feeling among mothers that an earache is a simple matter and the thing to do is to wait until it ruptures or "breaks" as they call it. Therefore, I believe there is a wide field for education among the caretakers of children that falls to the man who is taking care of children, warning the mothers and the caretakers that an earache is a serious thing and that it needs prompt attention.

Dr. Mary A. Naylor (Pittsburgh, Pa.): I should like to ask Dr. McLallen what is his opinion of the child with a running ear attending school?

Dr. Royal S. Haynes (New York, N. Y.): It seems to me that perhaps we do not always appreciate how much better an opportunity the pediatrist has to know the ears of children than the otologist. If we make, as I think we should, a routine examination of the ear of every child whom we examine, we shall not only gain a great deal of information about the child's ear and his nasopharynx, but we shall see also how many ears become red only to subside promptly without any need of interference. I do not think the otologist appreciates as well as does the pediatrist how commonly the eardrum becomes red with the slightest cold, and that the majority of these cases need no treatment. He, seeing a large proportion of more serious cases, is inclined to feel often that a given ear is worse than we know it is.

Dr. McLallen (in closing): Naturally a child with a running ear can get well much more quickly if cared for at home. If he has medical treatment, cleanliness, rest and good food, and removal of adenoids, we may hope for a good result providing there is no necrosis of bone, which is evidenced by a foul-smelling discharge.

There was a point brought out by the last speaker that I simply mentioned in the paper. I do think that the pediatrist has often a greater opportunity to know middle ears than the otologist because the pediatrist sees the ear from the very beginning. He sees it when it has an acute infection, he passes on through its stages, and he catches the ear right in the beginning stage which the otologist rarely sees. As Dr. Price said, I do believe it is as important for the pediatrist to look at the ear as to listen to the lungs.

SELECTIONS

THE MANAGEMENT OF URETERAL CALCULI

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Previous to the introduction of roentgen ray diagnosis, the presence of calculi in the ureter was looked upon as a rare occurrence. No further back than the beginning of the present century the demonstration of these formations in the ureter was of such infrequent occurrence, that it was regarded as of sufficient importance to merit the publication of long descriptions of each case. Schenck,[1] writing in 1901, states that up to that time less than ninety cases of operative removal of ureteral calculi had been reported in the literature, and it may be remarked in passing that the great majority of these were accidentally found at operation, so seldom was it possible to make a positive diagnosis.

The advent of the roentgen ray as a diagnostic aid very speedily changed these conditions. Leonard,[2] writing only three years after Schenck, was able to report sixty-four personal observations, and thereafter the finding of stone in the ureter became so common that few reports of isolated cases found their way into print.

Relative Frequency of Renal and Ureteral Stone: Leonard's experience also casts an interesting side light upon the relative frequency of renal and ureteral calculi. In a series of 320 roentgen ray examinations for calculus, he found stone in the kidney thirty-three times, as opposed to the sixty-four cases where it was located in the ureter, a proportion of practically two to one. This is diametrically opposed to what had heretofore been held concerning the location of urinary calculi, and emphasized the importance of systematically looking for them in the ureters. The experience of the past twenty years has not altogether upheld Leonard's findings, and the occurrence of primary ureteral calculi is still considered rare. In the careful study of ureteral stone made in 1915 by Braasch and Moore[3] of the Mayo Clinic, which is founded upon 654 cases of lithiasis of renal origin, "363 stones were removed from the kidney and 230 were found lodged in some portion of the ureter. To this number should be added sixty-four cases in which a stone lodged in the ureter was either removed at the time of the cystoscopic manipulation, or was passed immediately after," making a total of 294 cases of ureteral stone against 363 located in the kidney, a proportion of about three to four in favor of the renal location.

Primary and Secondary Ureteral Calculi: Even if a calculus is found in the ureter its location there may be either primary or secondary. The primary variety is no doubt extremely rare. They are probably formed by the deposit of phosphates, or less often, urates, on the wall of the ureter upon the site of a previous ulceration, or possibly in subjects of antecedent surgical intervention, where a suture of some nonabsorbent material has been left. These calculi are irregular in outline, and often very rough in texture, soft, porous, friable and exceedingly adherent to the wall of the ureter. They seldom give rise to marked symptoms and increase in size very gradually.

What are known as secondary calculi are those which originally form in the kidney and are expelled into the ureter, where for some reason they are arrested in their passage toward the bladder. Secondary calculi are usually more round and smooth than those originally formed in the ureter, and their outlines are more regular. Once sidetracked in the ureter, the calculus may undergo a variety of fortunes. It may lodge there and yet cause practically no symptoms for a long period of time, and may then pass into the bladder without the patient being in any way conscious of its sojourn in the ureter. If it remains quiescent, and does not interfere sufficiently with the flow of urine to give the stream an intermittent character or cause any abnormality and there is no infection nor inflammatory reaction, there will be little or no indication of the presence of a calculus.

But more often these conditions do not prevail and a sequence of symptoms will be presented, usually obscure and baffling, though their degree of severity depends largely upon the size and motility of the calculus and the extent to which its presence interferes with the flow of urine, together with the nature and intensity of the inflammatory reaction which is set up in the urinary canal. Sometimes a calculus will lodge in the ureter in such a way as to act as a "ball-valve," thus producing an intermittent hydronephrosis. This happened in three of the cases x-rayed by Leonard where an intermittent "flush-tank hydronephrosis" caused by the partial occlusion of the ureter had led to the condition being originally diagnosed as one of floating kidney.

Etiology: Regarding the etiology of these formations, Guy L. Hunner,[3] a few years ago, wrote: "A review of the literature shows that ureteral calculi have generally been ascribed a renal origin and that the development of ideas concerning the etiology of urinary stone may be classified roughly into three periods. The first period dates from early medical history to the latter part of the nineteenth century and may be called the 'chemical' epoch in which the writers sought to explain the origin of stone in some obscure change in the composition of the urine."

Galen believed that there was a relationship between stone formation and gout; Paracelsus had a theory that the "sperma calculi" were formed through the agency of some animal cementing-substance existing in the blood; Sydenham and Boerhaave considered that a specific diathesis led to the crystalization of the stone-forming substance held in excess in the urine. "At the end of the eighteenth century, many authors, notably Wilson, 1795, wrote of the influence of sedentary habits." A century later, A. E. Roberts of the English army attempted to show that the absence of sufficient NaCl. and excess of K. in the diet of the natives of the Punjab, renders their blood relatively alkaline, resulting in the dissolving and excretion of uric acid as far as the bladder and thus produces the high frequency of urinary calculi among these people.

"The second period," marked off by Hunner, "includes the last two decades of the last century and the first few years of the present and may be called the 'bacteriological' epoch, in which writers emphasized the influence of microörganisms on stone formation. The third period overlapping on the second is synchronous with the recently developing accurate methods of study and treatment of ureteral diseases and may be called the 'mechanical' epoch in which injuries and inflammatory diseases within and without the ureter have been invoked as frequent causative agents in ureteral stone formation."

Hunner himself believes that calculi are more often formed in the ureter because of urinary stasis in strictured areas, than from any other cause and brings forward a large array of clinical data to illustrate the soundness of his contention. Rovsing, the great Danish surgeon, has also advanced this theory, but Judd,[4] reporting on a large group of cases from the Mayo Clinic, states that in those "in which a definite firm stricture was found, there was no evidence of calculus."

Pain: According to Braasch, pain as a result of stone in the ureter occurs from two conditions: (1) because of intrarenal tension as a result of urinary obstruction and (2) because of localized infectious changes. In a large series of cases he observed that pain was referred largely to the renal area, but that 15 per cent of these patients located the pain in the upper abdominal quadrant and 9 per cent, in the region of the lower ureter. This leads him to remark that it is obvious "that either an exploratory incision over the renal area, or a roentgenogram of the renal area alone would fail to disclose the actual lesion. It is probably true that renal colic as a result of lithiasis is caused more frequently by stone lodged in the ureter than in the kidney. The localization (of pain referred to the area of the lower ureter) may be so suggestive of appendicitis that, in case the urinalysis were negative, an exploration of the appendix might be justifiable without preliminary roentgenographic examination."

In a case of mine, a report of which was published last year in the *New York Medical Journal,* there was pain in the right lumbar region and marked tenderness over the right kidney, but when dye and phenolsulphonephthalein tests were applied, it was the *left* kidney which failed to eliminate and the roentgen examination revealed multiple small shadows in the left kidney pelvis. These findings were confirmed at operation though at no time was there any pain on the affected side, but always upon the sound one.

In reviewing the records of seventy-four cases of ureteral stone diagnosed at the Lankenau Hospital, it is noticeable that the pain and area of tenderness gave no indication of the actual position of the stone. Although the pain was usually in the lumbar region or in the upper abdominal quadrant, the stone, in the majority of cases, was found within a few inches of the bladder. Neither is it possible to differentiate between the pain produced by ureteral stone and that due to a stricture, as the type of colic produced is usually identical. It is thus evident that little, if any, diagnostic value can be attached to the location of pain.

Urinary Findings: Neither can much dependence be placed upon the urinary findings. Not infrequently neither pus nor red blood cells can be demonstrated in cases where ureteral calculi are found at operation. Important evidence may, however, be gathered from this line of investigation. Indeed, sudden total anuria may be the first symptom of ureteral calculus. This may be produced by the blocking of the ureter on one side, with reflex suppression on the opposite side, even when the other kidney is perfectly sound. A striking peculiarity of this condition—and one never yet satisfactorily explained—is that, though no urine may reach the bladder for several days, there will be no symptoms of uremic poisoning displayed by the patient. Judd reports two cases where no urine was passed for six days, but neither patient suffered any ill effects.

Diagnosis: In the diagnosis of stone in the ureter we must differentiate this condition from infections of the kidney (such as those due to the tubercle and colon bacillus or other bacteria), from obstruction to the flow of urine, from whatever source it may arise (as for example, stricture, with a secondary hydronephrosis), and from neoplasms growing in the kidney or pressing on the urinary tract.

In most cases, in order to make a positive diagnosis it is absolutely necessary to use the newer urological methods; that is, catheterization of the ureters with x-ray catheters, bilateral functional tests of the kidneys, the employment of the wax-tip and wax-bulb on the catheter for locating and treating obstructions, and the use of shadowgraph materials combined with roentgenography.

A positive x-ray picture of a stone in the ureter is of great value in the diagnosis, but a negative x-ray usually means nothing. In a large number of cases reported by Geraghty and Hinman[6] the stone was missed by radiography in twenty-two per cent of those diagnosed. The stones in these cases consisted chiefly of uric acid or ammonium urates. Many stones which are opaque, will not throw any shadow if they are surrounded by inflamed kidney tissue, pus or layers of fibrin. In a considerable number of cases, shadows, the nature of which is doubtful, will appear in the plate. The most common are caused by calcified lymphatic glands seen usually in the kidney region, or in that portion of the ureter visible above the brim of the pelvis. Pheboliths are generally found in the region of the spine of the ischium, and consequently in relation to the pelvic ureter. In all cases an opaque catheter should be used and another radiograph taken to outline the course of the ureter.

I cannot refrain from emphasizing the importance of soliciting the aid of first-class x-ray work in making a diagnosis. Why one roentgenologist should find a stone when another does not, I am unable to state. The one who fails usually blames it on the poor preparation of the patient, but it is my observation that those x-ray men who are not so particular about preparation give the best results. Just recently I received a negative report from one of the supposedly best x-ray men in this city, in a case where I knew a stone was present. I examined the plate myself and saw the shadow, which the roentgenologist declared to be due to gas.

It has been my practice to use a wax-tipped catheter in every case where I suspected a stone to be located either in the kidney pelvis or in the ureter. This method was first described by Kelly in 1894. In the female where sufficient dilatation cannot be obtained by means of the Wappler instrument, we may use the endoscope, or the Kelly cystoscope. This is, however, rarely necessary, because of the numerous ureteral dilators and bulbs adaptable to the Wappler operating cystoscope now on the market. The use of the Kelly cystoscope has one serious drawback—the very annoying position in which it is necessary to place the patient. It also causes more pain.

Not infrequently in the past and occasionally to-day, we have heard of a *general* surgeon, operating in vain for renal or ureteral calculus, and then obtaining from the pathologist, a stone to show the patient. With our modern urological methods at hand this should never occur. We might conceive of a patient presenting a typical picture of renal or ureteral colic, which is actually the result of a strictured ureter or of external pressure on the urinary tract. This is particularly true of female patients, and I have many times been asked to cystoscope females—and males occasionally — these patients afterward crediting me with great curative powers, when, as a matter of fact, it was the simple drainage of the ureters per catheter, and the emptying of their slightly distended renal pelves which gave them instant relief.

It is very important to locate these calculi accurately before operating, and not infrequently to do this it is necessary to resort to pyelography. I, personally, prefer to use 15 per cent sodium iodid solution, as it throws the best shadow. Recently, I was asked to see a three-hundred-pound man who had just recovered from an operation for renal calculus which had been performed by one of our best surgeons. Though the x-ray showed a large shadow, the surgeon maintained that there was no stone present. My wax-tipped catheter passed all the way to the pelvis and showed a scratch upon withdrawal. My x-ray catheter passed slightly beyond the shadow. The pyelogram showed the calculus lying in the bottom of the rather large pelvis, and a second operation produced a stone the size of a large horse-chestnut.

In male patients, I have adopted the method first described by Burton Harris, which consists in passing the ureteral catheter—properly tipped with wax—into the bladder, allowing its distal three or four inches to curl up within the viscus. Over this catheter the cystoscope is threaded in such a way as not to scratch the wax portion of the catheter. When the cystoscope is in place the catheter is withdrawn, always keeping the wax tip in view until it arrives at such a position that it can be passed into the ureter. Upon withdrawal of the catheter the wax is examined for scratch marks with a magnifying lens. Some urologists regard the advantages of the wax-tipped catheter as negligible, but a single personal experience where I did not use the wax-tip has convinced me of its value. This was a case of calculus in the intramural position, acting as a ball valve. The catheter readily passed to the pelvis, and I drained over 30 c.c. of clear urine before there was any interruption in the drop; this suggested a hydronephrosis. I reported that there was no obstruction, the ureter patulous throughout, and a possible hydronephrosis. The patient was relieved of his colic, and in three or four days was discharged from the hospital. About two weeks later a second attack of renal colic brought the patient to another urologist, the calculus this time causing complete obstruction. Needless to say, I was regarded as a "dub" by both patient and doctor.

In considering the management of ureteral calculi, these cases may readily be divided into three classes:

1. Those in which the stones are expelled spontaneously, and this includes by far the larger majority.
2. Those where the stones may be evacuated by intravesical manipulation, or other persuasive methods.
3. Those where the stones cannot be dislodged, making surgical operation imperative.

The internal medical treatment of ureteral stone is chiefly of value in modifying the complications. Numerous drugs have been advocated, backed up by clinical data, as having the power either to dissolve the stone or to cause its evacuation. Of those so mentioned, urotropin, salol and quinin in combination, and benzyl benzoate inhibit infection and tend to diminish the irritation about a stone. At times I have thought benzyl benzoate administered in large doses did have some favorable action upon the ureteral muscles, relieving spasm and thus encouraging the stone to pass on. It undoubtedly makes the patient more comfortable and prolongs the interval between attacks and I therefore use it routinely, but there is no drug which has the power to dissolve renal or ureteral stone.

The discovery of a small stone in any portion of the ureter is no positive indication for immediate operative procedure. The peristalsis of the ureter, and the downward pressure of the urinary current will usually cause the stone to pass on to the bladder. Furthermore, statistics show that a large percentage of these stones are spontaneously expelled.

A calculus in the ureter which is making progress may be allowed to proceed if the passage does not consume an inordinate amount of time. When, however, it comes to rest at any point in the ureter, the condition cannot be regarded as harmless. Its very presence in the ureter is a constant menace to the integrity of the kidney. From its earliest formation it has probably been causing progressive injury to the important kidney parenchyma. The ever-present danger of infection to these irritated and compromised tissues from organisms excreted by the kidney should always be remembered. The one exception to this danger is the lodgment of a small stone in a pouch at the ureterovesical junction, which apparently may maintain this position for years without causing pain or obstruction. Yet, at times this type acts as a ball valve and intermittently causes destruction.

This leaves us to the consideration of our second group, where we employ persuasive methods upon the calculi, *via* the cystoscopic or intravesical route. In general the manipulations are as follows:

1. Displacement of the stone by pressure against it with a ureteral catheter or bougie. This probably acts in three ways: stimulating the ureter to contract efficiently; twisting the stone to a more favorable axis to the pressure of the column of urine behind it; or releasing a spicule of the stone which is actually caught in the mucous membrane.
2. The passage of a bougie-catheter beyond the stone, when possible, and the instillation of sterile oil, glycerin and various anesthetic solutions into the ureter above the stone.
3. Division of the ureteral orifice and wide dilatation of the lower portion of the ureter.

Before making any effort toward the removal of the stone it is important to secure thorough general relaxation of the patient by a generous hypodermic dose of morphin and atropin one-half hour previous to the contemplated manipulation. In addition, I sometimes give an opium and belladonna suppository two hours before, and also order copious drinking of water, and five grains each of urotropin, salol and quinin, to prevent infection and urethral chills. All this increases the comfort of both patient and urologist. If I am so fortunate as to get a suitable case in the midst of an attack, I instill into the ureter about five c.c. of 2 per cent solution of the sulphate of papaverin. This drug is supposed to have a selective action on the unstriped muscle of the ureter, causing relaxation. I have employed this in two cases, one patient being a physician, who told me it gave him almost instant relief from pain, his stone being passed twelve hours later.

Routinely, a ureteral catheter is passed to the point of obstruction and 2 c.c. of 5 per cent novocain solution injected under considerable pressure. Five minutes later an attempt is made to pass the catheter beyond the stone, and if this is successful, six to ten c.c. of warm sterile olive oil is injected. Various sizes of ureteral catheters and tips, ureteral dilators, scissors and forceps should always be on hand to bring about dislodgment if possible, and to aid in passing the catheter beyond the point of obstruction. If the stone cannot be dislodged, or the catheter passed beyond it, the stone is probably spiculed and impacted, and operation will be imperative. In the presence of clear urine and no untoward symptoms, a second attempt may be made five or six days later, but it is probably foolish to temporize and run the chance of traumatism and infection. However, it should be remembered that the ureter is quite elastic and thorough dilatation should always be employed before giving up. (In one instance I passed a No. 16 F.-bulb to the point of obstruction.)

When the stone is presenting at the orifice, or is intramural where it cannot be seen, and it is impossible to pass a small catheter beyond it, the orifice may be slit with scissors on its upper surface, this frequently being sufficient to release the stone; or the stone may sometimes be grasped with a pair of forceps and released or broken so that it will pass later. Dr. Furniss of New York, has reported successful fulguration of these intramural stones. An interval of at least four to six days should elapse between attempts, unless in the meantime symptoms are severe and anuria threatens. The presence of pus is a danger signal and indicates that the case is not one for manipulation.

I have employed these various procedures in twenty-eight cases and in all except two have been credited with obviating the necessity of operative interference. Yet it is difficult to tell in every case whether it was not Nature who happened to be kind to me and to the patient. However, I do feel that I had something to do with the evacuation in at least 50 per cent. In 25 instances the stones were found in the lower third of the ureter within three inches of the bladder, twenty of these being on the left side. In eight cases the stone could be seen presenting at the orifice and in five it was encountered in the intramural portion. In ten instances one attempt was sufficient to cause dislodgment and passage of the stone; in eight cases, two trials were necessary; in six, three trials; and in two cases, six trials distributed over a period of six months. In one instance the stone was lodged in the upper third of the ureter and after I had twice pushed it back into the renal pelvis, it was finally passed.

Radical Operations: The vast majority of ureteral calculi are arrested in the upper third or in the pelvic portion of the ureter. Not less than 90 per cent lie in one of these two positions and more than 75 per cent are likely to be found in the pelvic portion. For stone in the upper one-third, the incision for approach is practically the same as the old oblique incision for reaching the kidney, though it need not be carried so far back, and in some cases should go farther forward. The chief point to remember in locating any portion of the ureter is that it does not lie behind the peritoneum, but rather in or between the layers of that membrane, and will, therefore, be pushed forward as the peritoneum is stripped from the muscles. Before putting on my gloves, I always pass a ureteral catheter up to the point of obstruction, as this will prevent the stone from slipping downward from the field of operation, and likewise greatly facilitate the finding of the ureter. One of my friends, a very competent surgeon, told me that he on one occasion opened the appendix for the ureter. The stone once located, incision should be made above, and not over, the stone, as a precaution against stricture formation.

For stones in the lower third of the ureter, I prefer an incision above and parallel to Poupart's ligament, as is described by Gibson. This is virtually a muscle-splitting operation, and with the patient in the extreme Trendelenburg position, an excellent exposure of the whole pelvic portion of the ureter can be obtained. The Judd operation—a median incision as in suprapubic cystotomy, the bladder being grasped and drawn to one side and the peritoneum stripped off laterally—is, in my opinion, a difficult procedure only adapted to lean subjects and when the stone is situated close to the bladder wall. Drainage after these interventions should not be removed before the tenth day, particularly in the pelvic cases.

As to the probability of recurrence of ureteral stone, the literature shows a marked paucity of statistics. I have not attempted to get in communication with all my patients, but two have returned with a recurrence in twelve months. Cabot,[7] after reviewing both his renal and ureteral cases, puts the chances of recurrence as one in three.

Conclusions: My experience leads me to the conclusion that in the great majority of cases of calculi located in the ureters, the stones can be removed without resort to surgery. Careful questioning of these patients will often reveal the fact that they have already passed one or several stones and this indicates that the great majority of these concretions will spontaneously evacuate. If a case is seen very early, particularly if there is no history of a stone having been passed, expectant treatment may be very properly undertaken, but we must also bear in mind the possible danger of permanent damage to the kidney.

Except in the presence of definite contra-indications, which are rare, we should always attempt to dislodge the stone by intravesical manipulation before resorting to surgical intervention. Practically all stones in the lower portion of the ureter—unless very large or extremely adherent to the ureteral wall—can be removed in this way.

If operation is deemed necessary, the best approach to the ureter is the muscle-splitting procedure described by Gibson.

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RUPTURE OF THE RECTUM RESULTING FROM INSTRUMENTATION

REPORT OF A CASE

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Rupture of the rectum is a comparatively rare condition. The majority of the cases previously reported resulted from application of compressed air blasts to the anus in horse-play about industrial plants. Cases of more or less extensive laceration of the rectum resulting from a fall on pointed objects are occasionally met with. So far as I know, there are no reported cases of such an injury resulting from instrumentation in the course of examination or treatment. The case here reported is of interest, not only in the manner of its incidence, but by reason of the secondary conditions which complicated its course.

Mrs. E. M., white, age 41, widowed for 12 years, in good financial circumstances and of good habits, had always been delicate but never was seriously ill during adult life. For 10 years about the time of puberty she wore a brace on account of spinal curvature. She was mildly neurasthenic and always taking medicine; slight of build but of good color and nutrition. She was chronically constipated and at times took osteopathic treatments for relief from this trouble. For the past 4 years she had a profuse leukorrhea and at times suffered some pain in the sacral region and in the right lower quadrant of the abdomen. She was never pregnant. Menstruation was always regular and without pain. On September 24, 1922, pelvic examination at our hands revealed a profuse purulent vaginal discharge and marked erosion of the cervix. The uterus was of normal size, in extreme retroversion and firmly fixed. There was a walnut-sized hard tumor, slightly pedunculated, on the right side of the lower segment of the uterus, which was probably an intraligamentous fibroid. The tubes and ovaries were apparently normal.

On the morning of November 18, 1922, she went to her osteopathic practitioner for treatment for constipation by abdominal massage. The osteopath had but recently returned from taking a much advertised two weeks' course in the treatment of rectal diseases, and felt that this was a suitable case for the exercise of his newly acquired knowledge. The patient reluctantly consented to submit to the examination he proposed; she was placed in the knee-chest position and an attempt was made to pass a full length sigmoidoscope. When the instrument was inserted for about half its length (6 inches) she was seized with an agonizing pain in the lower abdomen, and fainted. On being revived she was nauseated and vomited; the pain and vomiting continued throughout the day. Regardless of her pleas to be taken home or to have her physician called, she was detained at the office of the osteopath, and about 6 p. m. a physician who was friendly to the osteopath came in and gave her a hypodermic of morphin. About 9 p. m. the osteopath took her home in his car, carried her to bed, gave her two hypodermic injections (presumably of morphin), and told her she would be all right in the morning. She slept throughout the night, but pain and vomiting returned with the morning. About noon her family became frightened at her condition and called for me. At 2 p. m. I saw her, and on the strength of the history and the physical findings made a diagnosis of probable rupture of the rectum with beginning general peritonitis. She was removed to the Blair Memorial Hospital.

On admission to the hospital at 3 p. m. the patient was much shocked, restless and anxious, extremities cold, respirations shallow and rapid, pulse thready. The chest was hyperresonant, the abdomen much distended, and rigidity and tenderness were general. Pain centered at the umbilicus; no peristalsis could be heard. Catheter specimen of urine showed only a trace of albumin. Leucocytes 11,300; polys. 76%. No vaginal or rectal examination was made. On account of the extreme shock, and after the lapse of 18 hours from the time of the injury, Dr. Fred R. Hutchinson, of the hospital staff, who saw her with me at this time concurred in the opinion that her best chance of recovery lay in expectant and supportive treatment: Fowler position, external heat, nothing by mouth or rectum, morphin p. r. n.

The next day, November 20th, the patient had reacted somewhat from the shock; the temperature was around normal, the pulse was of better quality, and there was no vomiting, although she was still nauseated. Pain continued constant and there was no apparent change in the abdomen.

November 21st, temperature reached 103; pulse rapid but of good quality. Passed some flatus; less tympanitic; greatest tenderness in the left lower quadrant. Very little nausea; ice and water in teaspoonful doses retained by mouth.

November 22d, patient was much more comfortable, tenderness and rigidity localizing in the left lower quadrant. There was a slight bloody, purulent vaginal discharge with a distinct colon odor, a small fecal stool and periodic oozing of pus and blood from the anus.

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November 23d, general condition much improved; the abdomen was soft above the umbilicus and but slightly distended; greatest tenderness in the left iliac fossa, but some tenderness and considerable rigidity on the right side. Vaginal examination showed bloody pus with colon odor flowing freely from the cervical os, and the right fornix was boggy and tender. One finger carefully introduced into the rectum encountered an indurated pitted area about 3½ inches up on the anterior wall with the retroverted fundus in apposition to it. Diagnosis: recto-uterine fistula with right-sided salpingitis.

November 26th, abdomen was not distended, and no tenderness or rigidity except in the right tubal region. Purulent vaginal discharge continued but colon odor was not so pronounced. General condition good.

November 29th, a well-defined, tender and painful mass filled the entire right lower quadrant. Temperature reached 102, kidney elimination much diminished and urine showed heavy cloud of albumin. Slight vaginal discharge. Leucocytes 13,000; 78% polys.

December 3d, with ice to the lower abdomen and Fowler position for the few days preceding, the mass in the right lower quadrant had decreased a half in size. There was no pain and much less tenderness. Temperature to 100.6 that evening. Urinary output for the past 24 hours had been normal in amount with a slight trace of albumin. Vaginal discharge slight, mucoid, and without colon odor.

December 10th, temperature had been normal for the past 24 hours; abdomen uniformly soft, no pain or tenderness.

December 17th, patient out of bed, appetite good, no pain or soreness, felt well. Vaginal examination showed no abnormal secretion. There was no cervical erosion and no discharge from the os. The uterus was still in extreme retroversion and firmly fixed; there was considerable thickening in the right tubal region but no tenderness.

December 23d, the patient had gained weight and strength rapidly and was able to walk without discomfort. Considering it unwise to attempt any pelvic surgery so soon after the healing of the recto-urine fistula, the patient was discharged from the hospital.

A recent report informed us that the patient has been in her usual condition of health and has not suffered any greater pelvic discomfort than she usually had before the injury.

COMMENT

The introduction of a full-length sigmoidoscope is, we believe, a major diagnostic procedure, and to be classed with cystoscopy and ureteral catheterization from the element of risk to the patient. Its use should be restricted to those who have sufficient experience to recognize the significance of pelvic adhesions, and the skill necessary to effect its passage by gentle manipulation rather than force. It is certainly questionable if sigmoidoscopy comes within the legal limits of osteopathic practice.

To us the great interest of this case lay in the rapid spontaneous closure of the recto-uterine fistula.

THE GENERAL PRACTITIONER AND THE SPECIALIST*

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In presenting to you this particular subject, possibly it would be wise, reversing the words of the great Cicero in his oration to Cataline, to ask you to bear with me in thus abusing your time and patience. I make no apology for choosing this subject, and my only regret is that there are not here present more of the specialists, and especially the pseudospecialists, to hear words directly addressed to them. The general medical practitioner, the family physician, if you will, needs no defense, for his life, his work afford far better defense than it were possible for me to offer. And yet it is so often heard that the day of the general medical practitioner is over, that now more than ever he is being relegated to the junk heap of useless and pernicious antiquities, and that his place is being filled rapidly by the specialists, or by members of our profession who unite in the bonds of holy, or possibly I should say unholy, group medicine, that a few words in his defense may not be out of place. Not for one moment do I decry the usefulness and even the absolute necessity for specialists, nor would I say that group medicine, properly organized for the *study* of patients and not for revenue only, has a proper place in the world of medicine. But I want to say, and most emphatically, that the more specialists, good or otherwise, there are, the more important and the more necessary is the position of the good, honest, progressive general practitioner in the social economy.

It certainly is a truism—that the practitioner, whether general or special, has only one excuse for existence, and that is service. The medical man must be able to serve his patients, and as long as he can give good, conscientious service he is filling a proper place in his or any community. His service must be good. Because there is an eye specialist in the community is no reason for a general practitioner to refer every case of conjunctivitis to the specialist. But he must know that he can give as good, as efficient service as the specialist. On the other hand, if he knows that he cannot, then at that point his duty to that patient ends and that of the specialist begins. Conscience, then, possibly is the greatest factor in determining the limiting boundary between the family physician and the specialist. The family physician has a place, and always will have a vitally important place in the life of a community. All talk to the effect that the day of the family physician is rapidly passing away, and that some day there will be only specialists, is pure bunkum. In fact, the contrary is true, and the family physician is only now beginning to acquire his own rights, rights indeed to pursue life, liberty and happiness even as other human individuals. The old-fashioned family physician, who was nothing more nor less than a slave or a pack mule for his families, possibly is, and ought to become extinct. It is not necessary to say that even yet there is far too much catering to the whims and fancies of a very exacting public as far as the observance of office hours, making absolutely unnecessary night calls, etc., are concerned. But the real family physician, he who is a member of the county, state, national and other medical or scientific societies, who subscribes for and reads the best medical literature, who is abreast of all progress in the medical world, who knows and employs in his practice products of the laboratory that have passed the stage of experimental test, he who is not carried away by every fad and fancy that so often lure the unwary, the family physician indeed who wisely combines heart and head, he to whom his patient is a patient and not merely a case—such a family physician will never pass away. As long as there are families, so long will there be family physicians.

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* Read before the Mifflin County Medical Society, November 1, 1923.

You will note that I have placed the present day family physician on a fairly high pedestal, that no longer is he marked by such external accomplishments as a long frock coat, a plug hat, or a beard reaching the waist line. The species as represented by these latter features is really becoming extinct, and rightly so, for in the present position of social economy and of the many isms, such an individual is only a burlesque.

The position, then, of the family physician in the community is an absolutely indispensable one, and with the increase in the number of specialists, that position of indispensability is becoming more and more evident not only to our profession but to the public as well.

Let us briefly consider the relation of the family doctor to the various specialists, and as the surgeon, probably, is the most general specialist of them all, we shall consider him first. I want to say here that that relation is not merely as a source of supply of patients for the surgeon. In many instances, I admit, the family physician serves only to feed the surgical clinic, and to that degree he fails to serve his patients in the fullest sense. In far too many instances, the doctor sends his patient unaccompanied to the hospital, or if he takes the patient to the hospital he leaves him or her at the hospital door, and the surgeon loses all point of contact with the family physician who had been caring for the patient days, possibly weeks, before admission to the hospital—that point of contact which indeed is extremely valuable for the further intelligent and proper care by the surgeon. The family physician too infrequently offers that point of contact, and the surgeon too infrequently demands it. And yet we all know that such a point of contact around the surgical table between family medical attendant and surgeon is extremely valuable, and in many, yes, thousands of cases means life or death to the patient. Pardon me for becoming personal in this matter, but my experience on this particular point, and no doubt the experience of each of you is a similar one, has taught me the life-saving wisdom of that point of contact. Let me cite just three instances.

In the first, a life was absolutely saved by the accompanying physician who diagnosed the condition of his almost moribund patient as gangrenous appendix with general peritonitis. The surgeon in the metropolitan hospital, much glorified by the sense of his own learning and self-satisfied astuteness, diagnosed puerperal sepsis, and not wishing to add to the mortality rate of his own privately owned hospital by operating upon a, as he thought, dying case of puerperal sepsis, under which circumstances operation would indeed be the height of folly, refused to operate. The family physician, who had delivered the woman a few days previously had followed the case from the day of delivery, from the day of the onset of the grave abdominal condition straight to the operating table, and feeling sure of the position he had taken as to diagnosis, demanded operation. After a more or less unpleasant consultation, the cocksure surgeon finally consented to operate, finding an extremely fulminating gangrenous appendix, and by wisely handling the patient from that point saved her life. Had not the family doctor accompanied that patient, she these many years would have been twanging the heavenly harp. A good mechanician is not necessarily a good diagnostician.

In the second instance, I had attended for a week a case of what I had diagnosed as an impacted gall-stone, several calls being necessary daily for the relief of the biliary colic by hypodermic injection. Finally consenting to hospitalization, I accompanied her, as in the previous case, straight to the operating table. The surgeon, after long and skillful attempts to locate and remove the offending stone, was not successful in finding any stone, and twice was on the point of closing the wound, declaring the pain of the past week could be due to adhesions from an operation performed five years previously for the removal of gall-stones. Having followed her case from the inception of the pain, I felt positive there was an impacted stone, and insisted that the search be continued, the patient being in good condition. After further rather unwilling searching, a stone the size of a small walnut was located at the extreme distal end of the common duct. Had I not been at the surgeon's side, the operation would have been completed without locating the stone, with at least uncertain results.

On another occasion, in the case of one of my own family, by carefully observing for 24 hours the disproportion between temperature, pulse and pain, I diagnosed a serious condition of the appendix, necessitating immediate operation, and had her in the hospital just 36 hours after the onset of the first symptoms. Upon reaching the hospital, the pain was still subsiding and the temperature decreasing as during the previous 12 hours. But also in the same proportion was the pulse becoming more rapid. Upon the apparent improvement of the pain and temperature, and not placing the proper importance upon the increasing rapidity of the pulse, not having observed that condition as long as I did, the surgeon did not deem immediate operation necessary. I did; and demanded, as courteously as I could, that he operate at once, which he did, and found a completely dead appendix, with the tip about to perforate.

I cite these three cases, not for commendation of self, nor indeed for condemnation of surgeon. But I do believe that the citation, which I know can be more than duplicated by the members of this society, shows the indispensability of the family physician, and that the family doctor who thoroughly studies his patient should be at the side of the surgeon who operates, and furthermore, the surgeon should ask for and generously consider the opinion of the physician who refers the patient to his clinic. Certainly the following words quoted from a recent address before a Rotarian luncheon at the Bellevue-Stratford are significant:

"When a successful operation causes the surgeon to be overwhelmed with congratulations, the family doctor modestly stands in the background; yet it was due to his intelligence that the patient was brought to the surgeon in time for the necessary operation."

But there are other specialists besides surgeons, large numbers of whom are as unnecessary as the proverbial fifth wheel of the wagon, whose specialism is founded on nothing more than an elaborate office equipment or some nonsensical product of an overworked laboratory. Such specialists are largely responsible for the various cults and isms. And yet strange to say, there is always a gullible public more than willing to be ensnared into their alluring offices. However, my paper is not intended to deal primarily with these near-specialists, or, to be more explicit, with the plain quacks, whether they have the title M.D. attached to their names or not. What is the relation of the family physician to reputable specialists, or what should it be? There are the oculists, the ophthalmologists, the laryngologists, the obstetricians, the pediatricians, the neurologists, the gynecologists, the roentgenologists, the radiologists, the electrologists with all kinds of devices, instruments and rays, and then the skin man, the heart man, the lung man, the kidney man, and others, to name only a few. As you just heard, I have placed them in the class of reputable specialists. Now, what is to be our relation with them, always keeping in mind that the ultimate end of that relation must be for the benefit of our patients? Of course there can be only one answer to that question. We are to employ them. There is a very legitimate, and a very important field for the properly trained specialist. In fact, such a specialist is as indispensable as the family physician himself. But while there is such a need, yet that need should not be overemphasized. That is the danger; especially since there seems to be an overproduction of specialists. I think it cannot be denied that many physicians are posing as specialists without first obtaining the necessary training to make them specialists. Thus, many good physicians are becoming poor specialists primarily for the sake of revenue, not for service. As some one so aptly expressed it, many of these specialists can be classed under the general head of "spondulix-therapy," and it is the chief duty of the honorable family physician to protect his families from these money grabbers.

Some years ago, I sent a patient to a brain specialist in one of the big medical centers. The diagnosis was clear, and the treatment, that of trephining, was definitely indicated. But this particular specialist consumed exactly two weeks, making unnecessary head examinations, all the while writing to me, and the trend of his letters was inquiry as to the financial condition of the patient. After the operation, and after his return, I had an unusually difficult time in persuading my patient that I was not a party to conspiracy involving his bank account. In fact, I am not convinced even to this day that my patient believed me entirely innocent of the whole financial taint that seemed to accompany every action of the specialist. To borrow from the venerable Litany, "from such specialists, Good Lord, deliver us, and our patients," So, gentlemen, it is our duty to study a case properly, treat it, if we can; if we cannot, and if we conclude a specialist necessary either for diagnosis or treatment, then it is still more our duty to refer our patient to the proper specialist, and if that specialist is a proper one, we shall never need fear that the patient will not be justly served. From the very nature of our work, our patients are certainly at the mercy of the medical attendant, and it is up to us to see to it that these patients are not betrayed into the hands of the unscrupulous, be they general or special practitioners.

Did you ever stop to consider how often it becomes really necessary for the resourceful, active, up-to-date family physician to refer patients to the specialist? It has been computed that from 80 to 90 per cent of all cases of illness can be ably and efficiently cared for by the family physician, with just as good, and very often better results than could have been secured by and from the specialist. And I believe those figures correspond with our own experience. Now if that be true, and I believe the figures none too high, then what folly to say that the day of the family physician is passing, his place to be taken by the specialist!

Let me conclude this rather rambling and disconnected paper by two quotations, the first referring somewhat indirectly to the specialist, the second to that larger class, the family physician. The first quotation is from a popular weekly magazine, with a few words changed by myself, the more to fit the present subject and occasion.

> "The real pest among reputable physicians is the young specialist who expects his patients to pay for his needlessly high overhead expenses. He may be known by his spacious and elaborate offices and waiting rooms, buttoned door boys, sleek secretaries, fluttering office nurses and powder monkeys of both sexes and an all-pervading shimmer of white enamel, mechanical novelties and glittering metal work. Not infrequently the young specialist who indulges in all these fripperies is trying to put over a poor piece by means of costly stage effects. He sometimes forgets, and his patients still oftener fail to realize, that what he really has for sale resides in his own cranium, and that mere style, atmosphere and scenery are poor substitutes for knowledge, experience and technical proficiency."

The second quotation is from Robert Louis Stevenson, as found in a recent issue of the *Journal of the American Medical Association:*

> "There are men and classes of men that stand above the common herd: the soldier, the sailor, and the shepherd not infrequently; the artist rarely; rarelier still, the clergyman; the physician almost as a rule. He is the flower (such as it is) of our civilization; and when that stage of man is done with, and only remembered to be marveled at in history, he will be thought to have shared as little as any in the defects of the period, and most notably exhibited in the virtues of the race. Generosity he has, such as is possible to those who practice an art, never to those who drive a trade; discretion, tested by a hundred secrets; tact, tried in a thousand embarrassments; and what are more important, Heraclean cheerfulness and courage. So it is that he brings air and cheer into the sickroom, and often enough, though not so often as he wishes, brings healing."

Do we wonder, then, when we read elsewhere the words of Alton B. Parker, a famous jurist, in speaking about the doctor:

> "Where will you find another man to match the average doctor? He lives the true altruistic life, devoting himself unreservedly to others. His skill and time are yours on the shortest notice, in the blackest hour of night, and in the worst of weather. His devoted unselfishness, ready sympathy and healthy good humor but increase his gray hairs. I, for one, expect to find a neat M.D. shingle decorating very many of the more palatial Heavenly Mansions of Good and Faithful Avenue."

Let us who sometimes become despondent, and in the dark hours imagine that our efforts as family physicians are not appreciated, and that the physician's life is not worth living—let us heed these two wonderful and beautiful tributes to our profession. Let us be proud that we are family physicians, whose motto must ever be: "Ich dien"—"I serve."

PITTSBURGH ACADEMY OF MEDICINE

ABSTRACTS

THE TREATMENT OF UREMIA

W. H. WHITCRAFT, M.D.

The problem of uremia is an absorbing one, especially from the angle of etiology, and several theories have been from time to time advanced as to the cause. According to Riesman it occurs as a result of complex poisoning due to both endogenous and exogenous agents. It occurs as an end-result of nephritis or it may occur very early in the disease. The exact nature of the toxin or toxins which are operative in this symptom complex are unknown, but it has an affinity for many organs, hence the complexity of the clinical manifestations. Nervous phenomena are usually the most striking and may include aphasia, various paralyses, headache, disturbances of vision of varying degree, disturbances of hearing, neuralgia, convulsions and coma.

Treatment, as in most conditions, may be divided into the prophylactic and curative. We may consider uremia the result of nephritis, so prevention of uremia means careful attention to elimination in this disease. Given a nephritic, one needs to avoid sudden shocks of all kinds, exposure to cold and wet; all acute infections are to be avoided with the same care that is exercised in avoiding them in diabetes; avoid overexertion and fatigue. The diet should be easily digested and easily assimilated, as an attack of indigestion may precipitate an attack of uremia in a nephritic patient. Upon the onset of uremia the treatment is directed to the immediate alleviation of symptoms, together with as prompt and complete elimination of the causative toxins as possible.

Gastric lavage may be employed for the immediate relief of vomiting and hiccup, or as eliminative in washing out the poisons which are secreted into the stomach. However, this procedure is often impossible except under anesthesia, as the irritation of the tube causes convulsions. Laxatives of various kinds may be introduced into the stomach through the tube also, when one cannot give them in any other way.

Other treatment may be considered as eliminative. Of these, sweating under the exhibition of hot packs, hot baths, electric cabinet baths are ineffective.

Purgation is best effected by such saline laxatives as epsom salts, sodium phosphate and the natural laxative waters, etc. But one may get no results from these, as constipation is sometimes, or even usually a marked feature of uremia. Compound jalop powder, elaterium or croton oil may be necessary before free elimination by the bowels will take place.

Water should be given freely as a rule, since sweating increases urea nitrogen concentration in the blood. Headache and convulsions are relieved sometimes by free bleeding. Cupping is used either to the kidney region or as a measure to prevent pulmonary edema. Atropin is useful in this condition also. Many of these points are illustrated by a case which occurred recently and which is here reported.

Some time ago there was seen a young girl of 11 years, who became slightly confused upon getting out of bed in the morning. Her mother said that she did not seem to be able to tell the head of the bed from the foot. She had been somewhat dopy and quiet for a few days and her mother had noticed some slight puffiness under the eyes.

She vomited three times before she was seen and complained of severe headache. She had been passing urine freely until the morning when she was taken sick, but had passed none for ten or twelve hours at that time.

She was removed to the hospital at once and hot wet packs applied. At this time when asked how many fingers I was holding up she said she saw no fingers. However, upon her arrival she began to have convulsions which resembled epileptic seizures in many respects. These convulsions continued for an hour or more without much remission. Several attempts were made to wash out her stomach, but every attempt brought on a fresh convulsion. At this time her blood pressure was about 205 systolic.

Finally she was given enough chloroform anesthesia to stop the convulsions and to allow her stomach to be washed out with about a gallon of water to which sodium bicarbonate was added. At the same time three ounces of saturated solution epsom salts were introduced into the stomach through the tube. The patient was bled, about 250 c.c. being taken. The packs were continued and dry cups were applied to the kidney regions. From the time the anesthesia was started the patient never had another convulsion. The subsequent treatment was continuation of the packs, administration of epsom salts by mouth daily and care in the diet. All symptoms of uremia disappeared promptly and did not return. Headache, vomiting, convulsions, etc., all disappeared the first day. The same day she was able to count fingers rather uncertainly and in two days was able to read without any difficulty ordinary newspaper print. Her recovery has been uneventful, but at present her phthalein output is still a little low, although the urine is free from albumin and casts, has a specific gravity of about 1020 and she has a secretion of a little less than a quart in twenty-four hours.

The cause of this condition naturally was quite a problem, as her health had been very good previously and no kidney trouble had been suspected. However, one day some peeling of the fingers was noticed, and as she had associated considerably with a little girl who was sick with scarlet fever at the time our patient was taken sick, we concluded that she had had a mild and unnoticed attack of scarlet fever.

DIVERTICULITIS; USUAL CAUSE

A. W. SHERRIL, M.D.

W. Baensch contributes a paper on roentgen diagnosis of diverticulum of the duodenum with special reference to its etiology.

Two factors are apparently necessary for the development of these diverticula: one a constitutional predisposition, and the other a rise of pressure in the lumen of the duodenum itself. A typical feature of the last-mentioned form of diverticulum is their multiple occurrence and small dimensions.

J. E. Case diagnosed 13 cases of diverticulum of the colon, ten of which were multiple. They vary in size from diminutive canals which are only demonstrable with the microscope to large finger-shaped pockets whose distal end may be still more dilated. There may be a solitary diverticulum, but most of them are multiple. Ordinarily they occur only in the sigmoid; for the most part they are found near the transition into the rectum, but never below the rectosigmoid genu. Most multiple diverticula are true hernias of the intestine.

The diverticula are probably caused by long continued constipation and are therefore to be regarded as pressure hernias. The sigmoid, being the place of longest retention, is subjected to pressure and gas from within and to the formation of erosions or weakness at given areas. The inflammation may subside, prove recurrent, lead to local abscess formation, gangrene or acute peritonitis. History of long-standing inflammatory trouble in the left iliac region should suggest examination with sigmoidoscope, cystoscope and x-ray, though the latter does not exclude a diverticulum in which fecal matter or closure by inflammation prevents entrance of barium.

Wilensky does not consider that gastro-intestinal diverticulitis has as much recognition from the surgeon or internist as it deserves. Multiple diverticulitis presents a fairly definite clinical picture. In a large percentage of cases there are attacks of pain of variable severity; in about 25% a history of chronic constipation is obtainable and in about 30% of the cases with symptoms a palpable tumor is present.

The more common clinical picture has not been mentioned by any of the writers quoted, i. e., the early symptoms, which being present should suggest careful study of the case, as it is in the earlier stages that real help can be given. Whether the case is one of congenital or acquired diverticulitis, the symptoms are the same, i. e., gastric distress, loss of appetite, and even vomiting which tends to be explosive in character, general lassitude, the individual is sluggish physically and mentally after the bowels are well cleaned out. This latter fact the patient has noted himself. The fullness and sensation of weight in the lower left quadrant of abdomen is always present. It is hard to arrive at a correct diagnosis if there is a good deal of inflammation. The first thought is often chronic or subacute appendicitis, although the physical signs are not properly placed. However, the reflex gastric manifestations are prominent symptoms; if, as in many cases, added to the presence of a mass, with rigidity and tenderness, we have blood in the stool, cancer comes to our minds as the most likely condition.

It is not possible to arrive at a definite conclusion without the x-ray, and not then is the condition recognized if the case is not followed up after the barium enema 48 or 72 hours. If the x-ray shows no apparent pathology in the stomach, this should suggest immediately to look all the more carefully to the lower part of the gastro-intestinal tract for the cause of these supposed reflex conditions.

The first case reported demonstrates gastric symptoms fairly well.

I. W. M., male, age 55, vomiting frequently, had distress in epigastrium, with little relation to ingestion of food. He was constipated, nervous and depressed mentally, x-ray showing no pathology in stomach or upper bowel. Gastric analysis of no help; 72 hours bismuth enema showed numerous diverticula in sigmoid. Bland diet. Liquid petrolatum and irrigations of normal saline gave marked relief. The symptoms had been present in this case for 15 years, due to "sluggish liver" as he stated.

The second case showed difficulty in differentiating from carcinoma.

W. R., age 71. For last 18 months patient has had frequent involuntary movements of bowels, at times passing a good deal of blood mixed with stools. Was seen by several physicians in the east, who persisted in giving him bismuth and astringents. When first seen he had a profuse diarrhea, abdomen greatly distended, was toxic, extremely nervous and mentally depressed. He vomited large amounts of foul, partly digested material. A large mass was easily felt in the upper left quadrant of abdomen. The mass persisted after high irrigations and laxatives. At times stools contained blood and tissue which proved to be necrotic tissue from sigmoid or lower bowel.

Because of his age, emaciation, distention of abdomen, toxic condition, blood in stool, with persistence of mass, the presence of carcinoma was thought the most likely condition. After repeated attempts to give barium enemas, a picture was obtained which showed numerous diverticula of the sigmoid. The patient improved rapidly when treatment was instituted to relieve this condition. The undoubted cause of diverticulitis in this case is cerebral arteriosclerosis, as it is manifested clinically.

The cerebral arteriosclerosis has affected this man in rather a peculiar way. He did not know when his bowels acted, yet his sensory function is not impaired. The whole lower bowel had carried such quantities of material for long periods that pressure no doubt caused the diverticula, the diarrhea simply being softened material passing around the enormous masses of fecal material.

The abdomen was distended to an enormous size and even after the bowel was well emptied the distention continued. The mental condition has cleared to a great extent, probably because he is less toxic. This case has been under observation for 9 months and has improved to a marked degree. The supposed cancer mass has disappeared and has never returned.

CASE REPORTS

NICHOLAS G. L. SHILLITO, M.D.

The following case records of unusual interest are reported by Dr. Shillito:

The first is that of Mrs. A. N. I saw the patient with Dr. McCreight, who had been consulted in regard to a mass in the right gluteal fold, which she first noticed about six months before, and which had lately become painful. Patient well nourished, multipara, 32 years old, never had any serious illness. On examination a mass the size of a lemon was found in the right gluteal fold. It was movable, not adherent to the skin and not tender to pressure. It appeared to be a lipoma and was removed. Four days after its removal the wound broke down and on removing the sutures a mass larger than the original filled the cavity. Slight pressure on this growth caused it to return to the pelvic cavity through the sciatic foramen. The next day the abdomen was opened and the peritoneal cavity found to be obliterated by adhesions. The peritoneum was therefore stripped from the pelvic wall and a large flat mass found retroperitoneal which could not be removed. An attempt to close the wound failed on account of friable tissues which would not hold a suture. It was packed with gauze and the abdomen closed. She did well for 48 hours and died from intestinal obstruction. An autopsy was obtained, and the mass found attached to or infiltrating the pelvic wall had almost surrounded the bladder. On account of its contour no palpable growth could be found on bimanual examination. The pathological report was myxosarcoma, from unknown origin.

Mrs. Anna W., age 34. No children. Miscarriage 9 months previous to admission was referred by Dr. F. B. Elliott with request to remove retained placenta following miscarriage a few days before. On examination the uterus was found slightly enlarged, admitting finger, but no retained placenta was found. There was slight bleeding, a mass the size of an orange, palpable to right of uterus. Temperature and pulse normal. Laparotomy advised. On opening the abdomen a large amount of free blood and clots and a placenta 2 inches in diameter were removed, also the right tube. A case of tubal abortion. Dr. Elliott later informed me that he was present when she expelled a four months' fetus per vagina. This was, therefore, a twin pregnancy with one fetus intra-uterine and the other in the right tube.

Mrs. T. E. S., age 50. Parents both died of pneumonia. Two brothers and six sisters, all living but not in good health, but she did not know what was the matter with them. She had had five children, the last 5 years before, no miscarriages, had a laceration repaired 8 years ago. Had never been very strong but had had no serious illness. The chief complaint was pain in lower right quadrant.

On examination a nodular mass was found in the lower right abdomen, the upper border of which was at McBurney's point. The growth was the size of a grape fruit, apparently solid and resembled a fibroid, although no attachment to the uterus could be made out. The urine was negative and normal in amount. Temperature normal. Preoperative impression was a fibroid.

Operation: On opening the abdomen the mass was found retroperitoneal and to be a tuberculous kidney, entirely caseous, with the first two inches of the ureter solidly packed with caseous matter. The kidney was removed and the patient made a good operative recovery but died two years later from tuberculosis of the remaining kidney. This case is of interest on account of a tuberculous kidney with negative urine, and the location and contour resembling a fibroid.

Dr. O. Pine queries: "In China," a current fable says, "physicians are not paid for attending illness." Well, what is so strange about that? Do not a large percentage of Americans act the same way?

THE MANAGEMENT OF THE FIRST STAGE OF LABOR, WHERE IT IS PROLONGED, DUE TO CERVICAL RESISTANCE

DR. JAMES L. GILMORE

In order intelligently to manage the over-resistant cervix, we must think always of the cause.

The causes as commonly met with are: 1, scar tissue; 2, premature labor; 3, abnormally rigid cervix as sometimes seen in the elderly primipara —a cervix that has lost its elasticity.

In deciding how the individual case must be managed, the attendant must always consider the danger to mother and baby if let alone, and the advantages and danger to both brought about by the treatment.

1. Instrumental dilatation has nothing to recommend it.

2. The application of the obstetrical forceps to the presenting part and the attempt to secure dilatation by dragging the baby through the undilated cervix need only be mentioned to be condemned.

3. Packing the cervix and vaginal with gauze has been done a number of times, but because of its uncertainty and the danger of infection, it has been discontinued.

4. On a few occasions the vaginal dilating bag has been used. This also is uncertain in its action and may cause a tetanic contraction of the uterus. It has the advantage, I believe, of tending to prevent the rupture of the membranes.

5. The Voorhees bag has worked well in a number of instances, but it has seemed to the writer that it differed from nature in trying to make the uterus push the bag through the cervix rather than pull the cervix over the presenting part; in other words, trying to secure dilatation without effacement.

6. Cutting operations, of which the best is the anterior vaginal hysterotomy or vaginal Cesarean section, are a great help where rapid delivery must be accomplished and the baby is not too large.

7. Cesarean section is the method of choice rarely, only in those cases in which the cervix is so completely composed of scar tissue as to render dilatation impossible without destruction.

8. Manual dilatation is rarely indicated.

9. "Watchful waiting." Many cases can and should be let alone. This depends largely on the type of contractions the patient is having. Given contractions of moderate severity with a complete rest interval between pains, this is indicated.

This however is rarely the case. We usually have a condition of indifferent or ineffectual weak and irregular pains or else severe contraction close together with very often almost continual backache. Both are fatiguing to the mother, and the latter predisposes to fetal mortality. These women can be immensely helped by the use of morphin. By this procedure strength is conserved for the second stage, cervical damage is minimized by allowing a normal effacement and dilatation to occur, and fecal morbidity is minimized by preventing excessive pressure during the first stage of labor. Frederick B. Utley, M.D., Secretary.

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July, 1924

EDITORIALS

RESERVATIONS FOR THE READING SESSION

Have you made your reservation for the Reading meeting? Frequently it happens that the accommodations you desire at some particular hotel cannot be obtained if you delay in making your application.

The Berks County physicians are making preparations for a royal good time—and they have the reputation of being splendid entertainers. The program which has been prepared and will be published in the August issue, is one of the best ever offered to the Society, and will convince everyone who reads it that the material to be presented is worth many times the cost of attendance.

The generous estimate of 1,000 registration has been made, but the combination of the worthwhile scientific sessions, the fellowship to be enjoyed, and the scenic surroundings of Reading ought to attract fully this many if not more. Reading is located in the midst of mountain resorts, some of the more delightful of which have agreed to stay open until after the session, so that our members may be comfortably accommodated. If you have not already done so, look up the articles on the hotels, resorts, hospitals, etc., of Reading and vicinity, in this and preceding numbers of the Journal. Together with the usually fine weather of early October, and excellent state roads, this makes a combination that is too tempting to resist, and you will surely want to get your name on the register among the first thousand.

Another thing you cannot afford to miss is the commercial exhibit. The progress in the science of medicine during the past few years has been rapid, and the commercial houses, being alive to every opportunity, have kept well abreast of the scientific developments. You cannot have a better chance to examine and compare the different types of instruments and medicaments than this exhibit affords, for it is patronized by the best class of medical and surgical supply houses, manufacturers, publishers, etc. It is an education in itself, and would be sadly missed if it were to be discontinued as a feature of the annual sessions.

If a digression may be permitted, we should like to add that a few spaces remain unsold, and if you have some commercial friends you would like to see represented, space may be obtained through the office of the Manager of Sessions and Exhibits, 230 State St., Harrisburg, Pa.

A word to the wise is sufficient! Make your plans now. Do not delay arranging to spend part of your vacation at Reading, October 6 to 9, 1924, because if you delay, you may have to sleep in the park!

NEURORECIDIVE—THE DANGER OF INSUFFICIENT ARSPHENAMIN TREATMENT IN EARLY SYPHILIS

One of the disappointments in the arsphenamin therapy of early syphilis is the increased incidence of neurosyphilis, or what is called neurorecidive, following its insufficient employment. Neurorecidive or neurorecurrence is the occurrence in the earlier period of syphilis of a clinical manifestation of neurosyphilis, usually meningeal in nature, with or without an involvement of a cranial nerve, and appearing in the course of arsphenamin therapy. More frequently, however, it occurs after insufficient treatment with arsphenamin and the cessation of all other treatment. At the time of the neurorecidive the spinal fluid shows a high pleocytosis, marked presence of globulin and a positive Wassermann. The serum Wassermann remains positive.

It has been shown in neurorecidive that the spinal fluid prior to the use of arsphenamin was negative, the drug apparently exerting a provocative effect on an involvement of the neuraxis. Indeed, this provocative effect on the spinal fluid has been demonstrated without clinical evidence of neurosyphilis—what may be called neurorecidive asymptomatica.

Soon after the advent of arsphenamin, the occurrence of neurorecidive was regarded as due to the action of arsenic upon the nervous system. This however, is no longer the present concensus. The pathogenesis of neurorecidive concerns a consideration of the following analogous phenomenon: It has been shown by workers in experimental syphilis, that the spontaneous occurrence of generalized syphilis in rabbits following testicular inoculation is very exceptional. Brown and Pearce have notably shown that the primary testicular reaction plays an important defensive rôle in preventing generalized syphilis in the rabbit. By suppressing this local primary tissue reaction, generalized syphilis in rabbits is produced. The administration of subcurative doses of spirocheticidal drugs is one means, besides excision of the testicular lesion, of suppressing this local reaction.

The administration of a subcurative dose of one of the arsphenamins to syphilitic rabbits, or the administration of a few injections to humans in the early period of syphilis, followed by a cessation of treatment does not sterilize. In all probability a large number of spirochetes are destroyed. So rapidly is this accomplished that the usual tissue immunity which develops as a result of prolonged contact between parasite and host is lacking. As a result the surviving spirochetes develop in the susceptible host with great rapidity and severity. Bronfenbrenner and Noguchi observed that very minute quantities far below the sterilizing limits of antiseptic drugs, including arsenic compounds, exerted very marked stimulating action upon the growth of spirochetes in culture. Plaut and Mulzer have recently shown that the insufficient treatment of syphilitic rabbits with arsphenamin greatly enhanced the virulence of the strain of spirochetes with which the animals were infected.

It, therefore, appears that in early syphilis a few injections of one of the arsenicals and the cessation of further treatment inhibit the immunologic responses of the host to the parasite, and doubtless produce a condition analogous to that existing in the primary incubation period, in which there are spirochetes and no immunologic reaction. In this regard it is interesting to recall that the older syphilologists awaited the appearance of secondary manifestations in syphilis, not only for diagnostic purposes, but in order not to interfere with the orderly progression of the disease as it concerned the consummation of immunologic responses. This procedure is probably preferable to the harmfulness of insufficient arsphenamin treatment in early syphilis.

Consistent with the foregoing considerations is the clinical observation that following insufficient treatment with the arsphenamins in the early period of syphilis, the incidence of early neurosyphilis is greatly increased. This has been shown by many writers and recently has been well shown by Moore in his extensive clinical study. An early involvement of the nervous system occurs in untreated syphilitic patients as well as those treated only with mercury; its incidence is greater in those treated insufficiently with the arsphenamins.

By insufficient treatment is meant the injection of two, three or four injections of arsphenamin, followed by a too prolonged cessation of further treatment, or a large number of injections given at too frequent intervals. Any plan of arsphenamin therapy in the early period of syphilis which does not involve the continuous use of the drug is potent to cause distinct harm.

The incidence of neurorecidive is variably quoted. Its occurrence was considerably more frequent in the earlier period of arsphenamin therapy than it is at present. This can be explained on the basis of the treatment in vogue at that time, which was to administer one or two massive doses of arsphenamin in accordance with Ehrlich's unfulfilled dream of therapia sterilisans magna. Such treatment we know, is not only of little therapeutic value but, as aforementioned, increases the incidence of neurosyphilis and in addition predisposes to early tertiary symptoms. The incidence of neurorecidive has led to the statement that neurosyphilis has been increased since arsphenamin therapy. The notable champion of this view was the late Gaucher. In a sense this accusation is true, but it is based upon the improper use of the drug as a therapeutic agent.

In a large syphilitic clinic instances of early neurosyphilis appearing after insufficient arsphenamin therapy are constantly encountered, particularly among nonresidents, such as sailors and other transient clientele. These patients give the history of having received a few injections of arsphenamin at irregular intervals. Conversely, the number of clientele in the acute stage of syphilis applying for treatment and no longer attending after receiving just sufficient treatment to involve the acute manifestations of the disease, is considerable. The treatment of such patients presents a very serious problem.

The employment of the "follow up" system by the social service is a vital requisite in every clinic treating acute cases of syphilis. The danger of insufficient treatment with arsphenamin should be emphatically explained to the patient. On account of varying circumstances, if the patient cannot receive continuous arsphenamin therapy in the early period of syphilis, rather than to administer only a few injections of the drug, arsphenamin had better be withheld. Such patients should be treated with mercury or with bismuth until a more favorable time is presented for arsphenamin therapy.

The bismuth therapy of syphilis is too recent to have given us full information concerning the incidence of early neurosyphilis following irregular treatment with bismuth as compared with that of arsphenamin. For reasons already mentioned in this column (see Editorial, Bismuth in the Treatment of Syphilis, Pennsylvania Medical Journal, Jan., 1923) one can predict a lessened incidence of early neurosyphilis following irregular and lapsing treatment with bismuth.

The following dictum, applying to the treatment of early syphilis may be formulated: "No arsphenamin, rather than insufficient arsphenamin."

Those who may wish to follow up this subject are referred to the following literature:

Brown, W. and Pearce, L.: The Resistance (or Immunity) Developed by the Reaction to Syphilitic Infection. Arch. Dermat. and Syph., 2: 675, 1920.

Bronfenbrenner and Noguchi, H.: On the Resistance of Various Spirochetes in Culture to the Action of Chemical and Physical Agents. Jour. Pharmacol. & Exper. Therap., 4: 333, 1912-1913.

Plaut, F. and Mulzer, P.: The Influence of Insufficient Arsphenamin Treatment in Experimental Rabbit Syphilis. Munch. Med. Woch., 70, 623, 1923.

Moore, Jos E.: Studies in Asymptomatic Neurosyphilis, Johns Hopkins Hospital Bulletin, 23, 231, 1922.

J. V. K.

VOLUNTEERS WANTED

Are you in perfect health? Or do you only think you are? If you really want to find out for sure you will have a most unusual opportunity at the Reading Session of the Society, when the Committee on Public Relations will conduct physical examinations of one hundred attending members who think themselves in perfect condition.

Twenty of the most eminent physicians of the state have promised their services as examiners, Reading doctors have donated their offices for the good of the cause, and applications for examination are now being received. If you don't want to secure the opinion of an authority on the state of your health, and don't want to have the the instruction of an expert on the proper method of making health examinations, it must be because you do not realize what an opportunity the Committee is offering you. If you can possibly get to Reading even for a day, don't miss it. It will be more important to you than any other type of clinic you can attend, for the early detection of some unsuspected disease tendency may save you years of suffering.

The examinations will be strictly private and the results confidential, but it is hoped that those participating will act as missionaries throughout the state to spread the gospel of the periodic physical examination of the apparently healthy.

Please get your application in early, sending it to Frederick L. Van Sickle, M.D., 230 State St., Harrisburg, Pa.

INTERESTING PAPERS ON THE PEDIATRIC PROGRAM

The program of the Section on Pediatrics at the next meeting of the State Society should prove of great interest not only to the pediatrist but also to every general practitioner having children under his care. An effort has been made to have different subjects discussed which have not appeared on previous programs. Likewise, the section officers have tried to secure papers from men in the smaller cities outside of Philadelphia and Pittsburgh, feeling certain that there is much talent throughout the state that has not been uncovered. This is never an easy task to perform, but this year greater strides have been made than ever before.

The section is particularly fortunate in having as its guests two very distinguished men. Dr. Charles Hindee Smith of New York is one of the leaders of pediatric thought. His paper on the "Diagnosis of Tuberculosis in Children" is a most important one indeed. The section meeting room should be filled to overflowing to hear this paper. Dr. John A. Foote, of Washington, D. C., will present a paper on "Peritonitis in Debilitated Infants and Children." Dr. Foote is the head of the Department of Pediatrics in the Georgetown University School of Medicine and is widely recognized as one of the outstanding figures in diseases of children.

Most of the men from our own state are too well known to need any introduction, and some of the newcomers to the pediatric program will undoubtedly create most favorable impressions. The program is sufficiently varied to please the majority of men who treat children and the time is ripe for making further strides in progress.

When the Pediatric Section was formed, not a few men high in the council of the State Society, thought that it would die from athrepsia. Each year the interest and attendance has increased. Each year the papers evoke more discussion. Let there be no backward step at the meeting in Reading. R. K. R.

MEDICAL DEVELOPMENTS RECENTLY REPORTED

The vast amount of constructive scientific work being done in the United States is indicated by the programs recently presented at Atlantic City. The Climatological and Clinical Association had one of the best meetings of its entire existence. The papers covered a wide scope, the discussions were particularly good, the preponderance of tuberculosis work which has hitherto been very noticeable in the programs of this association, no longer existed. The general field of medicine was well covered with papers that were clinical, scientific and practical, presented by leaders from all parts of the country—respiratory diseases, cardiac diseases, diseases of the digestive tract, liver, kidneys, blood, endocrine and nervous systems.

Although the Association has a long waiting list comprising very good material, no names were presented for ballot this year, as the membership is practically full. Proposed changes in the constitution may permit the election to associate membership in another year. The election of Dr. George W. Norris of Philadelphia as president for the coming year gives promise that the standards of this society will be rigorously sustained.

The American Society for Clinical Investigation presented 26 papers of unusual merit which were read and discussed within their one day session. Some of the outstanding topics upon which new light was shed were: rheumatic fever in relation to leucocytosis; the use of pneumococcus antibody solution in lobar pneumonia; the relation of acidosis to epilepsy; the use of iodin in exophthalmic goiter; the iodin remission in relation to surgical operations; some experiences with "Intarvin" which did not seem to check up with some of the claims made for uneven fatty acids in relation to ketogenesis; a peculiar syndrome associated with low calcium and phosphorus in diabetes; the surgery of mitral stenosis with a report of a successful operation.

The meeting of the Association of American Physicians was marked by the epoch-making symposium on scarlet fever in which Drs. Dick of Chicago and Dochez and Blake of New York reported the final recognition of a strain of streptococcus hemolyticus as the specific cause of scarlet fever; the production of an antitoxin from the horse—both by the use of toxins and by the use of living streptococci; the cure of 25 out of 26 cases of scarlet fever within 24 hours by the use of this antitoxin, and the good news that Lilly and Company will soon be able to put this antitoxin on the market. There is also some promise of the development of a toxin-antitoxin immunization against scarlet fever comparable to that which is at present so widely and successfully used against diphtheria.

The relation of iodin to toxic goiter which was laid before this Association 12 years ago by David Marine was elaborated in the present meeting by Mason of Boston, and in the course of discussion it was reported that the Mayos' operative mortality in Graves' disease within the past year had been reduced from 3% to 1% by the application of Marine's suggestion of 12 years ago.

Dr. Walter A. Baetjer gave a most interesting and constructive discussion of the entire question of desensitization therapy.

Dr. Warthin described a case of progressive thrombophlebitis of splenic, portal and hepatic veins, which he said illustrated a clinical entity for which he proposed the name of Chiari's disease because it was first described by Dr. Chiari.

Dr. Cecil presented definite evidence of the beneficial effects of pneumococcus antibody solution if given intravenously and early in the treatment of lobar pneumonia.

There was a group of brilliant papers on cardiac diseases and an interesting description of the successful application of Sauerbruch's operation for the cure of obstinate empyemas and certain cases of pulmonary tuberculosis.

All these meetings were marked by graphic and concise presentation of the subjects with brief but snappy and suggestive discussions. Most of the papers were given in abstract, as the day is past for forensic papers read in extenso, followed by verbose discussion, garnished with bouquets and enlivened with jokes and innuendos. L. L.

SOLVING RURAL DOCTOR PROBLEM

Physicians are not always appreciated, but one who lives at Shamrock, Mo., recently announced he would have to leave the community because he wasn't getting enough money to survive. The community at once showed its appreciation by raising $1,000 in money and told him to double his rates and remain. Most communities show their appreciation of doctors by making them wait until they pay all others.—*Sturgeon (Mo.) Leader.*

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg.
Pittsburgh, Pa.

"SCHICKED" AND "DICKED"

Those members of our Society engaging in general practice who have not been conscientiously active in the immunization of children against diphtheria may not be expected to carry promptly to their clientele the latest advice in sickness prevention—the Dick test for scarlet fever and the technique for immunization against the dread contagion.

We believe that the program of the Pediatric Section of the American Medical Association drew the largest attendance at the recent session in Chicago, and the interest in the discussion of the prevention of scarlet fever and diphtheria was intense. The lectures with pictures on the same subject, as shown in the Association's moving picture theater, were attended by capacity crowds of keenly interested physicians.

Our own Committee on Scientific Work has provided for an authoritative presentation of this most important subject at our annual meeting in Reading, October 6-9, 1924, and we sincerely hope that our members will not only attend but that all will be alive to their specific responsibility for preaching and practicing immunization against scarlet fever and diphtheria.

On Thursday afternoon, October 9th, before the Medical Section, Dr. Zingher, Assistant Director of the Department of Health of the City of New York, will give an illustrated talk on "The Dick Test and Active Immunization with Scarlet Fever Toxin. Demonstration of the Dick reactions." Dr. Zingher will arrive in Reading on October 8th, in time to apply the Dick test to a group of children in demonstration of his paper.

TRUSTEE EDWARD B. HECKEL

On June 12, 1924, Edward B. Heckel, M.D., of Pittsburgh, Pennsylvania, was elected by the House of Delegates of the American Medical Association to serve for three years as a member of the Board of Trustees of the Association.

The nine members of this Board provide for and superintend the publication of the *Journal of the American Medical Association,* approve or disapprove of money expenditures authorized by the House of Delegates, and in the interim between sessions of the House, supervise the actions of committees constituted by the House.

Any one comprehending the magnitude of the task involved in the proper management of a scientific organization with ninety thousand members and a financial annual turnover of one million dollars will appreciate the responsibility and work devolving upon the members of this Board.

By reason of certain innate qualifications and an uninterrupted course of thirty-five years in the study and practice of scientific medicine, and an equally lengthy and intensive experience in the economics of the component and constituent county and state medical societies, Dr. Heckel will bring to the Board of Trustees of the American Medical Association wise counsel and seasoned virility.

In 1905 Dr. Heckel was President of the Allegheny County Medical Society, and in 1913-1914 President of the Medical Society of the State of Pennsylvania, and he has continued to this date unusually active in the affairs of his county and state societies.

Many years have elapsed since a Pennsylvanian has occupied this post of service, but we of Pennsylvania are confident of Dr. Heckel's ability to represent faithfully the best interests of the entire membership of the American Medical Association regardless of geographical divisions, and we of Pennsylvania are grateful for the confidence manifested by the 1924 House in his election.

"MILLIONAIRE FOR A WEEK"

A few years ago, one of Pennsylvania's sons, who had suddenly and unexpectedly acquired a few thousand dollars, chose for himself a meteoric career as "a millionaire for a day." Conveyed to the nation's metropolis by a special train and heralded by the nation's press in first page headlines, he wined and dined his ephemeral satellites in extravagant style, and returned to his home town in twenty-four hours content and pleased with his junket and the notoriety attained.

Pennsylvania has many sons (250 in 1924) who periodically become "millionaires for a week" during their pilgrimage to the sessions of the American Medical Association. Few millionaries choose to travel more luxuriously, and no millionaire meets rarer friends than does the doctor who has the habit of attending the annual meetings of the Association. Few millionaires receive more pleasure from money spent in travel, and no millionaire can get from travel the physical and mental "kick" or stimulation that the doctor gets who thus elects to combine pleasure with profit. The farther a physician is located from taxicabs and express elevators, from diagnostic clinics and illuminating discussions of general medical interest, the more does he need thus annually to become a "millionaire for a week."

Plan to attend the 1925 meeting, doctor; make early reservation at the headquarters hotel, become acquainted with visiting members from Maine to California, and test out in 1926 the promised joy in renewing such acquaintance. Your family, your colleagues, and above all, your clientele will share in the profits you will reap from such an annual investment in relaxation, knowledge and experience.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to June 16th:

Adams: *New Members*—Michael J. Brennan, McSherrystown; Henry F. Goeken, New Oxford.

Allegheny: *New Members*—Earl W. Cross, Curtisville; George L. Howder, West Elizabeth; Albert D. Frost, Diamond Bank Bldg.; William J. Lange, 5307 Baum Blvd.; William E. McConnell, 6913 McPherson Blvd.; Alice E. Schmitz, 626 Sheridan Ave., Pittsburgh. *Removal*—John W. Goodsell from Springdale to Box 65, Sandy Lake (Mercer Co.).

Bucks: *Reinstated Member*—S. Edward Fretz, Box 15, Whitestone, N. Y. *Removal*—James M. Klenk from Tullytown to Morrisville.

Dauphin: *New Members*—Guy C. Crist, 32 So. Thirteenth St. Harrisburg; Edwin L. Royer, Wiconisco.

Erie: *Death*—Martin C. Barrett of Erie (Univ. of Penna., 13), recently, aged 35.

Fayette: *Reinstated Member*—Charles W. Utts, Connellsville.

Indiana: *Transfer*—James P. MacFarlane of Vintondale to Cambria County Society; William Johns of Wilkinsburg to Allegheny County Society.

Lackawanna: *New Members*—Albert J. Baker, Duryea; William H. Summers, Gouldsboro. *Removal*—Reed Burns from Scranton to Honesdale.

Lehigh: *Death*—Albert N. Miller of East Texas (Bellevue Hos. Med. Coll., '78), June 4, aged 68.

Northumberland: *New Member*—George R. Reese, Shamokin Hospital, Shamokin.

Philadelphia: *New Members*—Benjamin H. Harris, 2703 So. Thirteenth St.; James C. Gamble, 514 So. Forty-second St.; Samuel Jaffe, 309 Pine St.; Frank H. Krusen, 1434 E. Chelten Ave.; Lewis S. Reese, 107 So. Forty-first St.; Abraham M. Rechtman, 311 So. Sixteenth St.; Mayer Rosen, 4164 N. Seventh St.; Maurice M. Rothman, 5915 Christian St.; Donald Riegel, 5110 Chester Ave.; Samuel S. Ringold, 2414 W. Clearfield Ave.; Maurice Saltzman, Mt. Sinai Hospital; John A. Sweeney, 6012 Market St.; Michael M. Wolfe, 1629 No. Fifteenth St., Philadelphia. *Reinstated Member*—Philip Abrahamson, 1341 So. Sixth St., Philadelphia. *Deaths*—Ernest LaPlace (Tulane Univ., '84), May 15, aged 63; A. Alonzo Sargent (Jeff. Med. Coll., '93), May 10, aged 52.

Snyder: *Reinstated Member*—Edwin M. Miller, Millheim (Center Co.).

Venango: *Reinstated Member*—Frank M. McClelland, Franklin. *Removal*—W. E. Fawcett from Oil City to Pureair Sanitarium, Bayfield, Wis. *Transfer*—Guy L. Alexander, Oil City, from Lancaster County Society; Franklin P. Phillips, Franklin, from Clarion County Society.

Schuylkill: *New Member*—John A. Carroll, Silver Creek. *Removal*—John W. Arbogast from Tower City to 46 No. Third St., Lewisburg (Union Co.).

Westmoreland: *Transfer*—Charlotte E. Goodman, Mt. Pleasant, from Dauphin County Society.

York: *Death*—Harry H. Jones of York (Univ. of Penna., '96), recently, aged 52.

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since May 17th. Figures in first column indicate county society numbers; second column, State Society numbers:

May 17	Mercer	68–69	7080–7081	$10.00
	Clearfield	67	7082	5.00
19	Northampton	140	7083	5.00
	Venango	50–51	7084–7085	10.00
20	Jefferson	47	7086	5.00
	Lackawanna	219–224	7087–7092	30.00
	Chester	70	7093	5.00
21	Venango	52	7094	5.00
23	Bucks	75	7095	5.00
	Washington	120	7096	5.00
	Snyder	8	7097	5.00
27	Allegheny	1239–1246	7098–7105	40.00
	Lancaster	124	7106	5.00
	Washington	121	7107	5.00
	Philadelphia	1853–1863	7108–7118	55.00
June 2	Lawrence	57	7119	5.00
5	Schuylkill	127–132	7120–7125	30.00
	Philadelphia	1864–1917	7126–7179	270.00
	Allegheny	1247	7180	5.00
6	Dauphin	151–152	7181–7182	10.00
	Washington	122	7183	5.00
7	Fayette	127	7184	5.00
10	Westmoreland	143	7185	5.00
12	Northumberland	57–58	7186–7187	10.00
13	Elk	24	7188	5.00
	Northumberland	59	7189	5.00
16	Chester	71	7190	5.00
	Adams	24–25	7191–7192	10.00

FREDERICK L. VAN SICKLE, M.D.
Executive Secretary
230 State St., Harrisburg, Pa.

PREVENTING MISSTEPS

No individual or organization can pass along life's highway without encountering circumstances which lead to missteps and mistakes. This has been true of the medical profession since, through an erroneous viewpoint, it has sometimes strayed into serious controversies and misunderstandings. The early attitude of arrogance on the part of practitioners of medicine towards any new form of healing, especially when promulgated in the form of a new therapy, and the hectic antagonism towards anything which was new led to years of strife and bitterness. This mistake has finally been smoothed out, and at the present time greater harmony exists among those who practice medicine than has ever existed in the past. But the lesson remains and the same misstep should not be made again.

There are many in the profession to-day who are antagonistic to those groups of individuals known as "cults," but this antagonism must not be permitted to become so pronounced as to influence public opinion against organized medicine. We must be careful not to make the mistake, which was made years ago, of violently opposing everything which pertains to a form of practice with which we are not in accord. If we do, the result may be more enemies for ourselves and more friends for those whom we oppose. Denunciation without the offer of a remedy to correct whatever evils may exist in present day practice would be a serious misstep.

The profession has a duty to perform towards the public which no other sect or cult is in a position to discharge. We should be the teachers of preventive medicine—which is a distinct advance over the mere treatment of the sick individual instead of prevention of his illness. Unfortunately, from the nature of our profession we are individualistic in our work. We are so busy with our research and our practice that we are apt to forget our educational relation to the public and leave to others the work of disseminating information about the new steps that are being taken to protect the people as well as to preserve and develop medical science. This is another misstep we must avoid. If, instead of denouncing the cults; if, instead of quarreling with their protagonists, we do our part in advancing among the public a knowledge of illness prevention, of health preservation, it will not be long until the people turn from those who cannot offer them this boon. Let us do by education of the public what years ago we tried and failed to do by denunciation. Let us take a place with the people that the members of the cults cannot take—that of educators in prevention of disease.

This is a work that must be done both individually and by the organization. There is much that every physician can do in the way of advice and instruction to the individual patient as to the matter of health preservation. And there is a vast amount of work that the individuals, functioning as members of the organization, can do to forward this benevolent purpose. We might point especially, by way of illustration, to the periodic health examination program which the physicians of the country have been advocating and which practitioners of the cults, from the nature of their various theories of disease, will be slow to take up. By application of this method of attack, by calling attention to our peculiar facilities for service, instead of to the failings of others, may we not avoid another pitfall and prevent another serious misstep?

At the same time, may we not influence public opinion towards more efficient legislative regulation of practice of the healing art? It is time for such legislative enactment as will provide that all practitioners, of whatever school or cult, shall pass the same examinations in preliminary and premedical subjects, in anatomy, physiology, chemistry, etc., with a difference appearing only in the application of therapy, and it ought not to be difficult by concerted effort to induce the enlightened members of the community to support this program.

This procedure would prevent another misstep—that of opposing those who seek a legal status for their method of therapy, and thus laying ourselves open to the charge of persecuting them. We should assume the attitude that we are desirous of allowing everyone to employ their choice of therapy, provided they are possessed of the necessary education. Given this education, the cults will in time disappear, and will be replaced by scientific prevention and treatment of disease. Let us take heed to our step lest we fall, and our former missteps will serve to guide us in the future.

PHYSICIANS AND COMMUNITIES EXCHANGE

CONDUCTED IN THE INTEREST OF PHYSICIANS WHO ARE SEEKING TO LOCATE IN A DESIRABLE COMMUNITY, AND OF LOCALITIES WHICH ARE IN NEED OF THE SERVICES OF A DOCTOR OF MEDICINE.

Address communications to The Medical So-

ciety of the State of Pennsylvania, 230 State Street, Harrisburg, Pa., giving full information.

Physicians

I am seeking a new location with a hospital. I am a roentgenologist, and have been doing this work since 1914, including my army service. I am now in the Reserve and am allotted to the X-Ray Department. My age and school are on file in the State Department of Medical Licensure.—*A. Lebendig, 23 S. White St., Shenandoah, Pa.*

I have been in poor health for a year, but have now regained my health and wish to enter active practice again. If you know of a location, unopposed, within 50 or 60 miles of Philadelphia in Pennsylvania, kindly let me know, and oblige—*B. W. Genung, M.D., Elmer, N. J.*

Communities

We are also informed of vacancies as follows, about which Dr. J. M. Quigley, 922 Dorey St., Clearfield, Pa., may be consulted:

There is an opening at Westover, Clearfield Co., Pa., a town of about 550 inhabitants, surrounded by good farming country. Practice ought to pay about $3,500.

At Lumber City, Clearfield Co., Pa., there is no physician, the former physician having died and his successor having failed in health. Lumber City is a town of about 500 inhabitants and is surrounded by good farming country. It should yield a practice of about $3,500.

Surveyor, one of a group of small mining towns, is now without a physician, owing to the failure of health of its former physician. This town is situated 10 miles from Clearfield and 18 miles from Karthaus. There is no physician in this distance of 28 miles. There are within a radius of 4 miles of Surveyor four fair-sized coal mines, and most likely a contract could easily be arranged with these four companies for the care of their men and families. Besides this, the whole distance between Clearfield and Karthaus is surrounded by a belt of farming country which will add to the practice.

The service rendered in this department is free of charge, and all interested parties are invited to communicate with the Exchange.

READING—OUR HOST IN 1924

The city of Reading was founded in 1784 by Thomas and Richard Penn, sons of William Penn. It is located in the heart of an industrial and agricultural center, 58 miles north of Philadelphia, 126 miles west of New York, and 50 miles east of Harrisburg. The incorporation into a city occurred on March 16, 1847, when the population was 12,000. Since then the growth was very rapid until 1920 when the population numbered 107,784.

"During the whole period of the Revolution, Reading was a depot of military supplies, a center of patriotic effort and the site of the camp in which were detained the Hessian prisoners captured at the battle of Trenton.

"The record established in the days of '76 has always been maintained, especially in the Civil and World Wars. In the former, her organization, historically known as the 'First Defenders,' was the very first to respond, after Sumter, to the call of Lincoln. In the World War, besides furnishing more than her quota of men, and money, she contributed one of the principal military leaders, in the person of Major-General Hunter Liggett."

TRANSPORTATION

Railroads: Reading is located on the main line of the Philadelphia & Reading Railway, and on the following branch lines: Reading & Columbia, Lebanon Valley and East Penn, Wilmington Branch, and S. & L. Branch. The Pennsylvania Railroad passes through Reading.

Electric Lines: "Direct to Boyertown, connecting for Pottstown, Norristown and Philadelphia. Direct to Allentown, with connections to Easton, Bethlehem and Phillipsburg, N. J. Direct to Adamstown and connect for Lancaster. Also line running to Wernersville and Womelsdorf."

Automobile Routes: Reading is located on the William Penn Highway, the Philadelphia Pike, the Lancaster Pike, and the Pottsville Pike. These roads enter Reading from the four points of the compass and at the present writing are in excellent condition.

During the days of the convention the city of Reading will welcome the visiting physicians, and the members of the Berks County Medical Society will strive to provide every detail which will make the visit an enjoyable one. In Reading are several organizations where visiting physicians will find delightful recreation. Such organizations are Berkshire Country Club, Reading Country Club, Penn Country Club, Rajah Temple, Masonic Temple, Elks, Odd Fellows, P. O. S. of A., Knights of Columbus, American Legion, Rotary Club, Kiwanis Club, Lion's Club, Wyomissing Club, and the Reading Chamber of Commerce. The Y. M. C. A. and the Y. W. C. A. will welcome any of the visiting physicians.

INDUSTRIAL

While physicians in general are not particularly interested in industrial conditions, all of the physicians who are in general practice share in the prosperity of the well paid wage earner, and those whose practice is favored by many of those who are directors of industry participate in the general prosperity of an industrial boom.

Reading is the third industrial city of Penn-

Pagoda

sylvania. "Reading is the home of the largest plants in the world, producing full-fashioned knitting hosiery machinery, single thread lace machinery, high grade alloy steel, glove silk underwear, full-fashioned hosiery, Holland window shades, small steel castings, menthol cough drops, heat treated automobile frames, butcher blocks, wrought iron pipe, goggles, children's shoes, narrow fabrics, and optical goods. In addition, the largest foundry under one roof in the United States, and the largest brick burning kiln in the country are located here. Reading is America's second largest center of hosiery and builders' hardware."

Penn Street Bridge

Prominent Buildings of Reading, Pa.

1—Boys' High School
2—Y. M. C. A.
3—Colonial Trust Company Building
4—Baer Building
5—Berks County Trust Company Building
6—Mansion House and Bright Building
7—Reading Public Library

COUNTY MEDICAL SOCIETIES

REPORTERS OF COUNTY SOCIETIES

ADAMS—James P. Dalbey, M.D., Gettysburg.
ALLEGHENY—Lester Hollander, M.D., Pittsburgh.
ARMSTRONG—Jay B. F. Wyant, M.D., Kittanning.
BEAVER—Francis H. McCaskey, M.D., Rochester.
BEDFORD—N. A. Timmons, M.D., Bedford.
BERKS—Clara Shetter-Keiser, M.D., Reading.
BLAIR—James S. Taylor, M.D., Altoona.
BRADFORD—Stanley D. Conklin, M.D., Sayre.
BUCKS—Anthony F. Myers, M.D., Blooming Glen.
BUTLER—L. Leo Doane, M.D., Butler.
CAMBRIA—Joseph J. Meyer, M.D., Johnstown.
CARBON—Jacob A. Trexler, M. D., Lehighton.
CENTER—James L. Seibert, M.D., Bellefonte.
CHESTER—J. A. Perkins, M D., Coatesville.
CLARION—James M. Hess, M.D., Tylersburg.
CLEARFIELD—John M. Quigley, M.D., Clearfield.
CLINTON—R. B. Watson, M.D., Lock Haven.
COLUMBIA—C. B. Yost, M.D., Bloomsburg.
CRAWFORD—Cornelius C. Laffer, M.D., Meadville.
CUMBERLAND—Calvin R. Rickenbaugh, M.D., Carlisle.
DAUPHIN—W. Minster Kunkel, M.D., Harrisburg.
DELAWARE—George L. Armitage, M.D., Chester.
ELK—Samuel T. McCabe, M.D., Johnsonburg.
ERIE—Anna M. Schrade, M.D., Erie.
FAYETTE—John D. Sturgeon, Jr., M.D., Uniontown.
FRANKLIN—Samuel D. Shull, M.D., Chambersburg.
GREENE—Robert W. Norris, M.D., Waynesburg.
HUNTINGDON—John M. Beck, M.D., Alexandria.
INDIANA—F. J. Kellam, M. D., Ernest.
JEFFERSON—W. A. Hill, M.D., Reynoldsville.
JUNIATA—Brady F. Long, M.D., Mifflin.
LACKAWANNA—G. A. Clark, M.D., Scranton.
LANCASTER—J. Sullivan, M.D., Lancaster.
LAWRENCE—William A. Womer, M.D., New Castle.
LEBANON—W. Horace Means, M.D., Lebanon.
LEHIGH—Harold E. Hersh, M.D., Allentown.
LUZERNE—H. Irvin Evans, M.D., Ashley.
LYCOMING—Wesley F. Kunkle, M.D., Williamsport.
MCKEAN—Francis DeCaria, M.D., Bradford.
MERCER—M. Edith MacBride, M.D., Sharon.
MIFFLIN—F. A. Rupp, M.D., Lewistown.
MONROE—Walter L. Angle, M.D., Stroudsburg.
MONTGOMERY—John C. Simpson, M.D., Norristown.
MONTOUR—John H. Sandel, M.D., Danville.
NORTHAMPTON—Frank J. Hahn, M.D., Bath.
NORTHUMBERLAND—Charles H. Swenk, M.D., Sunbury.
PERRY—A. R. Johnson, M. D., New Bloomfield.
PHILADELPHIA—Franklin M. Crispin, Philadelphia.
POTTER—Ross H. Jones, M.D., Coudersport.
SCHUYLKILL—Arthur B. Fleming, M. D., Tamaqua.
SNYDER—John O. Wagner, M.D., Beaver Springs.
SOMERSET—H. Clay McKinley, M.D., Meyersdale.
SULLIVAN—P. G. Biddle, M.D., Dushore.
SUSQUEHANNA—Robert B. Mackey, M.D., Montrose.
TIOGA—John H. Doane, M.D., Mansfield.
UNION—Oliver W. H. Glover, M.D., Laurelton.
VENANGO—John F. Davis, M.D., Oil City.
WARREN—M. V. Ball, M.D., Warren.
WASHINGTON—Charles C. Cracraft, M.D., Claysville.
WAYNE—Hugh Stevenson, III, M.D., Waymart.
WESTMORELAND—Joseph E. Sunder, M.D., Delmont.
WYOMING—Herbert L. McKown, M.D., Tunkhannock.
YORK—Pius A. Noll, M.D., York.

JULY, 1924

COUNTY SOCIETY REPORTS

BUCKS—MAY

The spring meeting of the Bucks County Medical Society convened in the Elks' Home, Bristol, on May 14th, at noon. The meeting was attended by about 75 medical doctors and their wives, doctors of dentistry and their wives, and several of those who are engaged in the nursing profession.

A dinner in the Community House, business meeting, scientific discussions, addresses as to Bristol's modern and improved methods of purifying its water supply and disposing of the town's sewage, and an inspection of both the borough water filtration and sewage disposal plants, featured the meeting.

President J. Fred Wagner, of Bristol, presided. The secretary, Dr. Anthony F. Myers, Blooming Glen, read the minutes of the last meeting.

A communication from Dr. George A. Knowles, of Philadelphia, secretary of the Medical Legislative Conference of the State Medical Society, was presented. A resolution was presented and adopted, directing the president to appoint a committee of three members from the upper end and three members from the lower end of the county, whose duty it is to keep the members of the State Legislature from this county, properly informed along the lines of proposed medical legislation.

Dr. William C. LeCompte, of Bristol, was elected delegate to the State Convention in Reading. The alternates selected were Frank B. Swartzlander, M.D., of Doylestown, and James Collins, M.D., of Bristol; Alfred E. Fretz, M.D., of Sellersville, was then nominated for District Censor.

Dr. S. Edward Fretz, of Whitestone, N. Y., a former resident of the county and a member of the Bucks County Society, was reinstated as an active member of the organization.

William G. Turnbull, M.D., Deputy Secretary of Health, Harrisburg, delivered an interesting and educational address on "Child Welfare." He stated that "the most important phase of this work is the prevention of diseases in children.

Starting out with diphtheria, a disease which 30 or 40 years ago, almost always proved fatal, and was a source of horror in the countryside as soon as it was known that an epidemic was prevalent, he stated that mortality had been reduced since the use of antitoxin to effect a cure. Following the discovery of the effectiveness of this, the death rate began gradually to drop and kept on dropping until about ten years ago, when it became stationary. Still about 1,500 children perish from this disease annually, which is a tragedy. It is, as yet, the most deadly malady to attack children.

This death rate remained stationary until the Schick test was used. Following this, Dr. Park, and his associates in New York, made rapid strides and discovered that 100 per cent of the people can be made immune by the use of toxin-antitoxin. Three injections of the toxin-antitoxin should be used a week apart. Immunization may take place after the first injection, but most certainly will after the sixth. Three injections will immunize from 80 to 85 per cent of the patients. Three injections should be given, an interval of three months allowed to elapse. The Schick test should then be used and three injections then given the remaining 15 per cent not previously rendered immune.

The children of New York that were immunized eight or ten years ago are still immune, according to test, therefore the results are considered permanent.

Dr. Turnbull urged all the medical profession to avail themselves of the means of reducing the fatality of the worst disease of childhood.

In touching on the prevention of tuberculosis, the eminent health man said that we should build up our children's constitutions and give them a chance to grow up, without infection. Immunity to tuberculosis comes on slowly and is subject to "ups" and "downs." All other infections make it go down. Statistics show that infection with measles and whooping cough lower the immunity. Children of nontubercular people, if not properly cared for, are just as apt to develop the disease as those of tubercular ones.

Post-whooping cough and measles cases should be taken to the child dispensary and have the gland and lung conditions watched; also the nutrition. A record of ill health following measles and whooping cough often occurs preceding the infection of tuberculosis. There are now only half as many deaths per year due to tuberculosis, as compared with 1906.

Dr. William L. Estes, M.D., surgeon at St. Luke's Hospital, South Bethlehem, brought a message of hopefulness and also asked for the help of all the medical men in the prevention and cure of cancer.

He stated that the word cancer, from the Latin word meaning crab, signifies a reaching out and holding fast to the tissues beneath.

This malignant growth is especially prevalent in civilization and civilized countries. Therefore there must be something in civilized conditions of society that helps in its development.

In certain regions it is also more noticeably found, especially in cold, marshy sections, like England and Holland. It is on the increase and according to the present death rate, the mortality will be 100,000 this year.

The actual cause is not known. One fact has been determined, however, and that is, that prolonged irritation on the tissues will produce it. There is no absolute evidence of heredity. The only inheritance in the children from weak parents is the lack of resistance to the invasion of diseases.

Most Americans over the age of 40 die of heart or kidney trouble. Following close upon the heels of these maladies in its destruction is cancer.

The cancer, in its precancer or tumor period, is a swelling made up of cells which are undifferentiated but very active. These tend to go out or radiate through the blood vessels into the lymphatics which catch the infection and hold it. It is enlarged there. The glands also then become infected.

Therefore, when the local infection is taken away, the gland must also be removed or the case is hopeless.

Dr. Estes urged every one to take care of all sores, and to have all lumps which persist, removed. Take them at their innocent time.

His message was "It is not too late." Of course, sometimes it is, but it has to go a long distance to be hopeless.

Every one, according to the noted surgeon, should have a thorough personal examination once a year. A good time for this examination is a person's birthday. A great many things could be stopped then.

In conclusion Dr. Estes said there was no cure for this dread disease but removal. The knife used early is the best means. This should be followed by radiation. This form of procedure has resulted in 35 per cent of cures. He concluded by averring that the average of cures of tumors is 100 per cent.

Luncheon was served in the Community House at 1:30 p.m.

Following the luncheon, Dr. Harry W. Albertson, of Scranton, State Society Councilor, spoke and congratulated the Society on the conduct of the meeting. He urged high ideals in the profession and a zealousness in the work.

As a prelude to the visitation and inspection of Bristol's filtration plant and the sewage disposal system which followed the adjournment of the afternoon session, Mr. Joseph R. Grundy, chairman of the Committee of Public Works of the borough, gave a clear and concise outline as to the installing and operation of Bristol's present modern systems of collecting and disposing of sewage.

He showed how the development of the borough's modern facilities in this line had lessened the infective fevers among the inhabitants of the town and also pointed out how, in his opinion, it had been a keen factor in persuading the government to build a shipyard here and also erect Harriman village which is now a part of the borough.

Summing up, he gave a great deal of credit to Borough Engineer John S. Roberts, Jr., and to Dr. Joseph deB. Abbott, who have given their untiring efforts and time to make the present systems what they are.

The meeting then adjourned and the visitors went on a tour of the municipal water and sewage plants.

Anthony F. Myers, M.D., Secretary.

CHESTER—MAY

On Tuesday, May 20th, the Society had the pleasure of meeting at the home of Dr. and Mrs. Mellor. This is an occasion toward which we all look forward, and it is regretted that inclement weather served to keep some of the members from the more distant parts of the county from attending. A crowd that comfortably filled the house took part in the business meeting, heard Dr. Eliason's talk on "The Surgical Treatment of Acute Empyema of the Thorax," and enjoyed the very attractive supper served by Mrs. Mellor and her aides.

During the business meeting it was decided to have as the program for the next meeting a full and free discussion of the present State Compensation Law, especially as to the fees that are allowed the medical profession for treating compensation cases and a discussion of the One Board Bill that should govern the granting of licenses to practice the healing art in this commonwealth. We all feel that a rank injustice is being done to the medical men and hospitals. We hope that the members will come to this meeting full of righteous indignation and brimming over with constructive criticism that will impress our guests, who are to be our representatives in the State Assembly at Harrisburg.

The question of the care of the county's tubercular cases was again discussed. The changes now being made at Embreeville for the care of such cases are not going to solve our problem. The building now being remodeled is for the care of patients now in the institution or that may develop in it, or may be sent to the County Home or the County Hospital. It is not for the care of such cases that would otherwise be sent to a hospital for incurables. Dr. Gifford reported that the county poor directors are coöperating however, and that we may in the near future have something more in line with the county's needs.

A letter from Representative Thomas S. Butler was read, telling us that the bill establishing the narcotic tax at three dollars ($3.00) for physicians has already passed the House and that if we desire to do anything more about it we should write to Senators Pepper and Reed.

A letter from Dr. Kolmer, with a questionnaire asking about the standard of laboratory work done in the hospitals in the county was referred to a committee consisting of Drs. Gifford, Hollingsworth and Stone.

Dr. Percival Nicholson, of Philadelphia, who was to have talked to us on "The Newer Methods of Infant Feeding," was unable to be with us because of a sudden illness.

Dr. Eldridge E. Eliason, of the University of Pennsylvania, very kindly came to our rescue. The Society owes Dr. Eliason a debt of gratitude. In his paper the Doctor stressed the point that the resection of a rib in a case of acute empyema is an operation attended by shock; that many of these cases are in a desperate condition when they come to the surgeon, and that they do not stand any operation well.

The method he spoke of is not new. Briefly, it consists of the insertion of a smooth, round-pointed trocar and cannula through an interspace and the insertion of a rubber tube through the cannula, of such caliber that when the cannula is removed the tube completely fills the opening in the chest. The tube is kept clamped with a hemostat except at intervals when the pus is allowed to drain away in relatively small amounts. When the positive pressure is relieved, a Y tube is connected with the tube in the chest, the upper limb of the Y connected with a bottle containing salt solution at a level higher than the chest, the lower limb of the Y connected with a bottle containing sufficient water to cover the end of the tube at a lower level. Salt solution is then allowed to flow from the upper bottle into the lower, causing a suction or negative pressure, and thus evacuating more pus. Salt solution can be allowed to flow into the chest by clamping the lower limb of the Y. If this reveals no bronchial fistula, Dakin's solution can be allowed to flow in out of the chest in a similar manner. This fractional removal of the exudate from the pleural cavity and the prevention of air from rushing in has the advantage of not subjecting the patient to the shock always incident to the sudden change of pressure in any body cavity, and is of particular importance in these desperately ill patients. It is a very simple procedure and can be done without removing the patient from his bed.

Dr. Eliason reported several cases—desperate ones in a practically hopeless condition—that have been treated in this manner and have made complete recoveries in remarkably short periods of time. Of minor importance, yet worth considering, is the fact that the cases treated in this manner use very much less gauze for their dressings than those operated by rib resection. Also the fatiguing and often painful, frequent changing of cold, wet, pussy dressings is practically done away with.

During the discussion that followed Dr. Eliason's paper, Dr. Palmer spoke of the use of a very similar method of treating empyemas that had been used very successfully at the Walter Reed Hospital while he was there in 1918. At that time Captain Mazingo was using a solution of gentian violet instead of Dakin's solution. Later the gentian violet solution was supplanted by the use of dichloramine-T with even better results.

J. Ashbridge Perkins, M.D., Reporter.

DAUPHIN—JUNE

The annual spring meeting of the Society was held June 3, 1924, in the Harrisburg and Polyclinic Hospitals. The program was furnished by members of the respective staffs, as follows:

HARRISBURG HOSPITAL

Surgical Clinic (Drs. Smith, Shepler, Whipple)

A. M.
8:30 Urethral Polyp.
8:50 Abdominal Hysterectomy.
9:15 Right Inguinal Hernia—Local Anesthesia.
9:45 Prostatectomy—First Stage.
10:15 Right Inguinal Hernia.
Left Hydrocele.

A. M.
10:45 Toxic Goiter—Local and gas oxygen anesthesia. Discussion on "The Management of Toxic Goiter."
11:00 Cardiac Clinic—Medical Dispensary, Dr. W. M. Kunkel.
11:30 The "Goiter Heart"—Presentation of Case, Dr. Lenker.
11:45 Ward Rounds—Men's Medical, Dr. McAlister.
P. M.
12:30 Luncheon.
1:15 Business Meeting.
2:00 Treatment of Puerperal Eclampsia—Presentation of Case, Dr. Reed.
2:30 Auto-transfusion—Presentation of two Cases, Dr. Carson Coover.
3:00 Acute Tetanus—Presentation of Case, Dr. Walter.

POLYCLINIC HOSPITAL

Two preoperative cases:
(1) Cancer of the Cervix, Dr. Wm. T. Douglass.
(2) Gall-Bladder Disease, Dr. H. F. Gross.
One postoperative case:
Multiple Tuberculous Arthritis, and Tuberculous Meningitis.

W. M. Kunkel, M.D., Reporter.

ELK—JUNE

At its regular monthly meeting on June 12th, the Elk County Medical Society had present its District Councilor, Dr. W. S. Brenholtz, of Williamsport, who gave a very instructive talk.

The society decided to appoint two of its members to act along with members of the other county societies of its district as a committee to arrange for a district meeting during the summer.

Dr. M. M. Rankin, Ridgway, read a paper on "Eugenics," which was freely discussed.

S. T. McCabe, M.D., Secretary.

LEHIGH—APRIL-MAY

The regular April meeting of the Lehigh County Medical Society was held Tuesday afternoon, April 8th, at the Nurses' Home of the Sacred Heart Hospital. A fair attendance of the County medicos, with a number of the Hospital nurses and Sisters made the audience a rather representative one.

The speaker of the afternoon was Dr. A. L. Kotz, pathologist of the Hospital, who took as his subject "Cancer." After a brief discourse as to the varieties of cancer, he demonstrated by slides various stages of the dread disease.

A paper on "Certified Milk" was read by Dr. F. W. Pinnes of Newark, N. J. Samples of certified milk were distributed by a farm located in New Jersey. The proprietors stated that this milk is to be sent to Allentown daily and can be obtained from one of the local dairies.

At this time a committee appointed by the president met and organized themselves into a milk commission, with Dr. Bausch as president, Dr. Kline as secretary, and Dr. Backenstoe as treasurer.

An assessment of one dollar per member to help meet the expenses of the Medical Legislative Conference of Pennsylvania, was levied, the members responding to a man. It is hoped that every member will respond to this important matter, as the work of this committee concerns every one of us.

The attention of the Hon. W. M. Croll was called to the reduction of the narcotic drug tax from three dollars to one dollar. Mr. Croll acknowledged correspondence and said he would do all in his power to have same attended to.

The May meeting of the Society was held on the evening of May 13th, at the Hotel Allen. This meeting was one of special interest, for we had the President-Elect of the State Society and Dr. J. P. Crozer Griffith, a pediatrician of Philadelphia, as speakers, with the ladies invited as guests. A most enjoyable evening was spent. Covers for a splendid turkey dinner were laid to the number of about a hundred. When "eats" are mentioned preceding a meeting a good attendance is always assured, so this time was no exception.

Dr. Henry spoke mostly on the legislative work done and to be done. He was followed by Dr. Griffith, who read a most interesting paper on "Prevention of Summer Diarrhea in Children."

The members present were very sorry indeed to learn of the retirement of Dr. Griffith as a member of the Faculty of the University of Pennsylvania. This paper to our Society is to be his next-to-last public speech as a member of the Faculty, although even though retiring from the University he will continue in private practice. We were glad to have the opportunity to hear his valuable paper.

Following the program, the floor was cleared and the business worries of the doctors were cast aside for the fancy steps which were indulged in to the music of a very good orchestra. "Good Night, Ladies" was played only too soon. Come again, ladies; you are welcome always. Harold E. Hersh, M.D., Reporter.

LUZERNE—MAY

The regular meeting of the Society was held in the Medical Building on May 21, 1924, at 8:40. The meeting was called to order by President Scheifly.

Dr. Fischer reported for the Committee on Practice of Medicine and Surgery. Dr. Kocyan reported for the Committee on Public Health and Legislation. Dr. Janjigian reported that steps were being taken to have a more complete understanding between physicians and undertakers concerning postmortem examinations and requested that a committee be appointed for this purpose. Moved by Dr. Meyers and seconded, carried. The President appointed on this Committee to Confer with Undertakers Drs. Janjigian, Wenner and Dailey.

A very interesting symposium on "Radium" was then presented to the Society: Dr. H. A. Fischer read a paper on "Physics and Chemistry of Radium"; Dr. A. W. Grover on "Therapeutics with Radium"; and Dr. V. Edwards on "Report of Cases Treated with Radium." The papers were discussed by Dr. Gibby.

The second meeting in June is to be the "Outing Meeting." H. Irvin Evans, M.D., Reporter.

PHILADELPHIA

May 14, 1924

The President, Dr. F. Hurst Maier, in the chair.

Dr. John A. Kolmer: "The Immunity and Pathology of Syphilis in Relation to Prognosis and Treatment."—In considering the treatment of syphilis the processes of immunity and pathology must be kept in mind. In other diseases we depend on immunity processes. How much can we depend on them in syphilis? The immunity in this disease is complicated and much knowledge has as yet not been unravelled. The chancre is the first immunological reaction. The larger the chancre and the cutaneous lesions the better will be the response to treatment. Experiments have proved that measures tending partially to sterilize and depress the action in the chancre prevent the dissemination of spirochetes. It is thought that antibodies are produced in the chancre, and a substance is produced here that will give the Wassermann reaction. An explanation of the absence of a chancre in subsequent infections of a syphilitic individual lies probably in the fact that there are enough antibodies in the blood to counteract a local reaction. The old theory that a syphilitic is highly resistant to further infection, that there are antibodies that protect against a new attack, is hard to believe when the antibodies present will not stop the progress of the pathology. There is never sufficient immunity for a complete self cure, which emphasizes the importance of the proper treatment in all stages of the disease. There is no explanation of the latency of lues other than immunity. Pregnancy seems to increase the immunologic reactions.

The nature of the immunity in syphilis is unknown, it seems to reside in the fixed cells of the body rather than in the blood stream. The latency of lues can be broken down by trauma, by intercurrent disease and by injudicious treatment, and the administration of a provocative dose must be considered as a very responsible measure. Nothing, from the laboratory standpoint, supports the view that drugs increase the antibodies. Rather, they cure by direct effect upon the parasite. The pathology of syphilis greatly influences the treatment. In the primary and secondary stages (the first 6-8 weeks) the disease may be treated regardless of the patient, since early in the disease there has been no fibrosis. In the late stages the problem is one of mesarteritis and the approach by therapeutic measures is difficult. It is a mistake to expect the removal of fibrous tissue.

In doing the Wassermann test much depends upon the technique. When first discovered it was thought to be specific, but since the antigen need not be the extract of the germ it is not biologically specific. That it has a practical specificity is due to the fact that the substance responsible for the reaction is a by-product of the cells in contact with the spirochete or its toxins, capable of precipitating lipoids in suspension with flocculation and fixation of complement. The largest amounts of this substance are found in the serum of the most active cases. Therefore it is an index of the degree of infection, not of the resistance. There is no parallelism between the strength of the Wassermann reaction and the amount of clinical injury. The symptoms are the result of interference with physiological function and vary with the location of the spirochetes. In the United States the Wassermann reaction, when properly conducted, is highly specific. Frambesia, or yaws, a disease most uncommon here, is the only other instance of a positive Wassermann reaction. Reports otherwise are probably due to technical errors.

The complement fixation test, when properly done, may be the sole means of diagnosis, since cases of latent syphilis may have no other symptoms than a positive Wassermann. Therefore it is the duty of the serologists to make the complement fixation test as sensitive as is consistent with specificity.

Films followed showing the explanation and technique of the Wassermann reaction.

Dr. Benjamin A. Thomas: "The Treatment of Syphilis in Its Primary and Secondary Stages."—The old dictum that the most successful practitioner is he who most successfully treats syphilis may still be held true. There are some outstanding facts that must be borne in mind: the necessity of early diagnosis, the superiority of maximum to fractional doses of salvarsan, the increased incidence of arsenical reactions, the increment in Wassermann-fast cases, the dissatisfaction with the drugs now employed, synchronous therapeutics, and the follow-up on the blood and spinal fluid.

Substitutes better than salvarsan and neosalvarsan have not been made, and the dermatitis with these is greater and there is more need for supplemental mercury treatment. An improved drug—one more potent, a spirocheticide—is much needed. If the case is diagnosed early and treated before the Wassermann becomes positive a cure is possible in 90% of cases. The prognosis in the secondary stage is less hopeful. Material from suspicious sores and serum from glands should be examined microscopically with dark field illumination; Wassermann workers should coöperate for uniform methods. The incidence of false positives with the cholesterin antigen is removed by the new Kolmer cholesterin-lecithinized antigen. The term Wassermann should be avoided in speaking to the patient, as a positive report may lead to serious mental results and a negative one to a premature feeling of safety and disregard of treatment.

The Wassermann reaction is important for prognosis and treatment. In cases where the reaction is still negative three to six intravenous injections of salvarsan or neosalvarsan at weekly intervals usually suffice. In the Wassermann-positive group, treatment should be continued for 1 to 2 years even though the test is negative in a week or so. Six full doses (0.1 gm. per 30 lbs. body weight) of salvarsan should be given at weekly intervals, two to three weeks after the last dose a Wassermann should be made, then a second series given. At the end of this treatment a spinal fluid should be taken since this is the stage when neurosyphilis frequently begins. Then a third set of treatments should be begun. Mercury is not employed during the arsenical treatment. When the latter is completed, the protiodid pill or some other form of mercury is given until the stage of physiological tolerance is reached, when the dose is halved and given in series, with rest periods between, over a period of two years. Spinal fluid should be tested at intervals throughout life. The iodids are superfluous in the primary and secondary stages.

There have been presented a great number of antisyphilitic agents and much unwarranted experimentation has been done. Bismuth is the last drug to be brought up. It is slower than arsenic in reaction and the toxic complications with it are greater than those with mercury. Argyria has been reported from the use of silver, and sulpharsenol has not come up to the hopes once held for it. The therapeutic efficiency of the new drugs is disappointing and they should be used only when arsenic is impossible because of idiosyncrasy, when intravenous treatment is impossible or in Wassermann-fast cases.

When an individual may marry and procreate is determined by the case. Marriage may take place after two years of adequate treatment and one year when the patient is clinically free from the disease—when blood and spinal fluid are clean; in Wassermann-fast cases, when the spinal fluid is clear. They should not procreate for two years more. In the female there should be a two-year period instead of one. Antiluetic treatment should be continued and should be given to the child. One or two courses of treatment should be given yearly throughout life. It is our problem to gain the coöperation of the civil authorities and boards of health to see that proper treatment is carried out.

Dr. Jay F. Schamberg: "The Treatment of Visceral and Neurosyphilis."—Some decades ago it was thought that the main manifestations of syphilis occurred on the skin and in the central nervous system. Popularly it is thought to be a blood disease. Pathology has recently shown that it is a polyorganic disorder, with a rapid diffusion after the implantation on the skin. The second stage is a septicemia, with a lodging of the organisms in the tissues. Seventy per cent of the cases show evidences of pathology in the central nervous system, with globulin and a pleocytosis in the spinal fluid. Local antibodies must destroy the spirochetes in certain organs.

Mercury was the drug employed when syphilis first appeared in Europe, later the iodids were used, then through Erlich's investigations, the arsenobenzols. Arsphenamin has a greater affinity for the spirochete and less affinity for the body cells than has mercury, and animal experimentation has shown a toleration for arsenic more than fifty times as great as for mercury. "606" is therapeutically more active than neosalvarsan or other modifications, but is not as safe. The therapeutic effect is gained in the affinity for the parasite; the toxic effects result from affinity for the body cells. Sulpharsphenamin may be used intramuscularly but the cutaneous complications are much increased. The arsenic preparations are contra-indicated in any hemorrhagic condition, e. g., tuberculosis, gastric ulcer, hemophilia. Bismuth was introduced by Leviditi and one year's use in the clinic is very encouraging. It is equal to or better than mercury, is painless, is well borne, and a dose of 100 mgs. every five days gives no severe reaction. Troparsenide, a derivative of the pentevalent arsenic, has been found by the Rockefeller Institute to be of more value in nerve syphilis than arsenobenzene (it is crystalline and hence more diffusible than the colloid) but since there is in its administration a danger of blindness the dosage must be most carefully prescribed.

In acute syphilis the aim of the treatment is to exterminate the infection with as much vigor as possible, with large and relatively frequently repeated doses. In chronic cases (10-30 years' duration) the treatment is primarily symptomatic. Extinction of the positive Wassermann here is not the first concern; the test is used rather as a diagnostic aid and prognostic guide. Erlich gave as contra-indications for arsenobenzene, renal disease, myocarditis and advanced involvement of the central nervous system. It is better to proceed with remedies not causing excessive destruction of the spirochetes—mercury, iodids or bismuth, allowing for a gradual destruction of the organisms and absorption of the syphilitic infiltrate. There is a larger incidence of acute yellow atrophy of the liver and jaundice than in pre-arsenic days, due probably to a local macular eruption, a measle-like outbreak brought on by a too sudden breaking down of spirochetes. Cessation of treatment predisposes to this, and the proper treatment consists in the further administration of the drug.

Neurosyphilis occurs in three types, endarteritic, exudative (chiefly meningeal) and parenchymatous (tabes, paresis). Arsphenamin, used early, is the most valuable preventive of late neurosyphilis. In the exudative type arsphenamin given intravenously may cause a disappearance of the symptoms after periods of treatment and rest. In paresis there is a degeneration of the cortical cells which may be arrested but not restored. Early examination of the spinal fluid should be made to prevent its occurrence. Intraspinal treatment may be of further benefit. The foreign protein treatment is being tried abroad—e. g., typhoid serum—

and encouraging reports have come from the use of malaria in paresis, the claim being that 50% of paretics are back at work. Every case calls for individual treatment, and focal infections or any deviations from health should always be eliminated.

Dr. Sigmund S. Greenbaum: "The Treatment of Toxic Reactions Produced by Drugs in the Treatment of Syphilis."—The mercurials, arsenobenzenes and bismuth compounds are the drugs most commonly employed in the treatment of lues and any may produce toxic disturbances. In 700 injections of bismuth there have been no reports of acute bismuthism but we have some reports of chronic bismuthism. These are always preceded by well defined clinical symptoms, such as bluish discoloration in the mouth, gums and teeth, and catarrhal stomatitis. There is no specific antidote, the treatment is eliminative. The reactions from the arsenobenzenes are as those following any other drug except that some are individual reactions, others the reaction to intravenous medication.

The following prophylactic measures should be taken: see that the ampoule is intact, that the patient is prepared, that the dose is properly graduated, that the solution is properly prepared, and watch the condition of the patient and know his tolerance. Syncope, edema, headache, dyspnea or bowel cramp may occur from hemoplastic shock, a vasomotor phenomenon, for which adrenalin chlorid or atropin sulphate, given 15 minutes prior to the dose, will act as an antidote. Another prophylactic measure is the withdrawal of blood into the arsenic solution. Delayed reaction consists in chill, headache, nausea, vomiting and diarrhea, tenderness over the liver, erythema and local edemas. This is prevented by the administration of a lowered dose and in moderate cases daily doses of thiosinamine should be given. After 24 hours, late toxic effects may arise—serous apoplexy (rare), urinary icterus, dermatitis, multiple neuritis (rare). Traces of albumin are not uncommon, but unless there is persistent albuminuria cessation of treatment is not indicated. Late jaundice may be syphilitic or toxic and the differential diagnosis, which is most difficult, must be based on the amount and frequency of treatment. The therapeutic value of biliary drainage must be remembered, and thiosinamine brings about a rapid functional and a delayed clinical cure, averting permanent functional liver damage. The diet should be rich in carbohydrates. Dermatitis is preceded by erythema, pruritis, hypersensitiveness, although early there may be no premonitary symptoms. In cases with marked itching, arsenic should be stopped. Local treatment should be given as for any acute dermatitis. Intravenous medication should be avoided. Gr. iii of thiosinamine should be given daily. Sodium thiosulphate also gives good results. The secondary infection which occurs in acute cases is of most importance.

Dr. C. H. de T. Shivers, in discussion, said that he had used bismuth in sixty cases of chronic visceral and neural syphilis, cases which were resistant to arsenic, with good results. He then cited a case of a male, 37 years, with cardiac dyspnea, dilatation of left heart, mitral regurgitation, ulcer on forehead, impairment of the vocal cords, to whom was given 0.1 gm. potassium bismuth tartrate once a week, and whose condition was thereby so improved that he was discharged from the hospital before one gram was taken. The Wassermann was still positive. Bismuth relieves headaches of meningeal origin and is effective in the lightning pains of tabes. In cases where there has been no albuminuria before the administration of bismuth, none appears afterward. Stomatitis is rare.

Dr. Russell Richardson stressed the importance of the reagents and care used in performing the Wassermann test. The antigen of Kolmer increases the specificity and delicacy of the test, especially if done quantitatively. The Wassermann is not as important in the diagnosis of lues as in the control of the treatment. He then gave a case of a man 65 years on whose blood the reports with the old antigens were negative; with Kolmer's antigen, weakly positive. The test was repeated every two to three weeks and as the condition of the blood increased the reaction became stronger, Kolmer's antigen showing a plus 2 before the old showed more than a doubtful.

Dr. E. J. G. Beardsley urged the prevention of syphilis by teaching prophylaxis. There is in the clinic to-day ten times as much lues as ten years ago. The public should be educated in this as in other diseases.

Dr. Jos. V. Klauder urged that reactions following treatment be prevented. The incidence of neurorecurrences is greater after insufficient treatment than after no treatment. The incidence of neurosyphilis is greater since the advent of arsphenamin. The importance of continuance of treatment should be emphasized. The toxic effects are proportionate to the intensity of the treatment. Therefore a continuous rather than periodic intensive treatment is better. He has never seen any untoward reaction with bismuth, and its use intramuscularly is unique. Prolonged administration may be devitalizing. The patient, not the disease, must be treated.

Dr. Schamberg said that he had received favorable impressions from thiosinamine as an antidote for arsenic toxin. In using Kolmer's antigen there are 20% more positives than with the old, nor has he ever seen with it a false positive.

Mary A. Hipple, M.D., Reporter.

PENNSYLVANIA NEWS ITEMS

DEATHS

Dr. Charles Egbert Richards, of Pittston, who was graduated from Jefferson Medical College of Philadelphia in 1887, died on May 13th, aged 59 years.

Dr. Harry H. Jones, of York, who was born in 1872 and was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1896, died recently.

Dr. A. Edgar Tussey, of McConnellstown, aged 65 years, died on May 29th. He was a graduate of the University of Maryland School of Medicine, Baltimore, class of 1883.

Dr. Edward Kirk, of Philadelphia, aged 77 years, died on May 16th. Dr. Kirk was graduated from Jefferson Medical College of Philadelphia in 1888 and was a Civil War veteran.

Dr. Joseph Ulsh, of Lykens, aged 69 years, died on June 12 from the effects of a paralytic stroke. He was graduated from the Medical College of Ohio, Cincinnati, in 1878.

Dr. Ulysses S. Strouss, of Beaver, aged 76 years, died on May 17th of pneumonia. He was graduated from the Western Reserve University School of Medicine, Cleveland, Ohio, in 1873.

Dr. Albert N. Miller, of East Texas, aged 67 years, died on June 4th following an illness of a week from pneumonia. Dr. Miller was a graduate of Bellevue Hospital Medical College, New York, class of 1878.

Dr. Floyd D. Drumheller, of Philadelphia, aged 44 years, died suddenly on May 21st of heart disease. He was a graduate of the University of Pennsylvania School of Medicine, Philadelphia, class of 1904.

Dr. Richard P. Taylor, of Wilkes-Barre, who was born in 1862 and was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1892, died on June 16th following an operation.

Dr. Joseph E. Powley, of Altoona, aged 58 years, died on June 3d of heart disease. Dr. Powley was graduated from the College of Physicians and Surgeons, Baltimore, Md., in 1892. At the time of his death he was on the staff of the Mercy Hospital.

Dr. Martin C. Barrett, of Erie, aged 35 years, died on May 24th following a long illness. Dr. Barrett was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1913. He served in the M. C., U. S. Army, during the World War, and was on the staffs of the Hamot and St. Vincent's Hospitals.

Dr. David B. Traver, of Steelton, aged 83 years, died on June 16th, after having been engaged in the practice of medicine fifty-four years. Dr. Traver was graduated from Jefferson Medical College of Philadelphia in 1869. He is survived by his widow, two daughters and one son, Dr. Samuel N. Traver, of Harrisburg.

Dr. Macy Brooks, of Philadelphia, aged 51 years, was killed on June 5th at Alexandria, Egypt, in an automobile accident. Dr. Brooks was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1901. He was a member of the Philadelphia Academy of Surgery and the American Urological Association. He also served in the M. C., U. S. Army, in France, during the World War.

Dr. Walter Davis, of Wilkes-Barre, aged 52 years, died on June 2d, from chronic nephritis. Dr. Davis was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1897. At the time of his death he was on the staff of the City Hospital of Wilkes-Barre and was also compensation surgeon for the Hudson Coal Company. In 1923 he was president of the Luzerne County Medical Society.

Dr. Edward D. Lumley, of Williamsport, an honorary member of the Lycoming County Medical Society, died on May 18th at the age of 84 years. Dr. Lumley was born in Clonmel, County Tipperary, Ireland, and came to this country when about 18 years of age. The early years of his life were spent as a civil engineer, but later he took up the study of medicine and was graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1871. He was engaged in active practice for fifty years.

Dr. G. R. S. Corson, of Pottsville, who was born in Williamsport in 1867, died suddenly on June 4th at the Warne Hospital, with which he had been associated. A week before he had undergone a herniotomy and was doing well. Death was due to an acute heart attack. Dr. Corson was graduated from Jefferson Medical College of Philadelphia in 1896. For eight years he was a demonstrator in anatomy and surgery at Jefferson. Later he became an instructor in the nose and throat department of the same hospital. Prior to his association with the Warne Hospital he was on the staff of the Pottsville Hospital. He served as president and secretary of the Schuylkill County Medical Society for several years. He represented his County Society in the State Society House of Delegates repeatedly, and several times he was elected from the State Society to the A. M. A. House of Delegates.

BIRTHS

Born to Dr. and Mrs. Robert M. Alexander, of Reading, recently, a son.

Dr. and Mrs. Lever F. Stewart, of Clearfield, have announced the birth of a son.

Dr. and Mrs. Frank L. Swift, of Dunmore, are receiving congratulations on the recent birth of a son.

Dr. and Mrs. William D. Stroud, of Philadelphia, are receiving congratulations upon the birth of a son, William D. Stroud, Jr., June 20th.

ENGAGEMENTS AND MARRIAGES

Dr. Joseph Cramp, of Melrose Park, Philadelphia, has announced the engagement of his daughter, Miss Margery Baum Cramp, and Harold V. Murdock.

Dr. and Mrs. William P. Walker, of Bethlehem, have announced the engagement of their daughter, Miss Susan Walker, and Harmar Denny Roberts, of Wynnewood.

Dr. J. Harold Austin, of Philadelphia, recently announced the engagement of his sister, Miss Elizabeth Worrell Austin, and William W. Battles, of Newtown Square.

Dr. and Mrs. John Lohra Laird, of Germantown, have announced the engagement of their daughter, Miss Elizabeth Baring, and Richard Lennard Henn, of Cleveland, Ohio.

The marriage of Miss Frances Miller, of Philadelphia, and Dr. John Porter Scott, of Overbrook, took place on Saturday afternoon, June 28th, at Taxmont, the summer home of the bride's father. The bride was given in marriage by her brother, Dr. Hugh McCauley Miller.

ITEMS

Dr. Frank Alleman, of Lancaster, is taking postgraduate work in Boston.

Dr. and Mrs. Burton Chance, of Radnor, left on the first of July for Bermuda.

Dr. J. E. Silliman, of Erie, recently celebrated his eightieth birthday and is still in active practice.

Mrs. William S. Piper and daughter, of Clearfield, sailed for Europe and the Black Sea about the middle of June.

Dr. T. E. Mendenhall, of Johnstown, attended the North Carolina State Trap Shooting Tournament and finished seventh.

Dr. H. B. Roop, of Columbia, recently took a three weeks' course in children's diseases at the New York Postgraduate Hospital.

Dr. Frederick J. Bishop, of Scranton, recently attended the brain surgery clinics of Dr. Nye at the Polyclinic Hospital in New York.

Dr. Charles E. Hays, of Johnstown, attended the meeting of the American Laryngological Society in St. Louis during the week of May 26th.

Dr. D. M. Sidlick, Instructor in Dermatology, Jefferson Medical College, has been appointed Dermatologist to St. Mary's Hospital, Philadelphia.

The degree of Doctor of Science was conferred upon Dr. Harvey Smith, of Harrisburg, by Bucknell University on the occasion of its annual commencement recently.

Drs. Charles Falkowsky, Jr., and L. G. Redding, of Scranton, are touring the South and West by auto and attended the Chicago meeting of the American Medical Association.

Dr. and Mrs. B. E. Bitler, of Pottsgrove, recently took a motor trip to Louisville, Ky., and Chicago, Ill., where they attended the sessions of the American Medical Association.

Mrs. B. B. Vincent Lyon and her family, of Philadelphia, who spent the winter at Mentone, Italy, have taken a villa at Monte Carlo for the summer. Dr. Lyon will soon join them.

A farewell dinner was given on the night of June 9th at the Hotel Casey, Scranton, to Dr. A. S. Cantor, of Dickson City, who sailed on June 12th from New York, on a six months' tour of Europe.

Dr. James Jefferson, of Johnstown, has started on an extended vacation of seven months. Part of this time will be spent in postgraduate work in surgery at the Mayo Clinic and a trip to Europe.

The annual dinner of the South Philadelphia Medical Club was held at McCallister's Café on May 29, 1924. Dr. H. Leon Jameson, the president, was toastmaster. One hundred guests were in attendance.

Dr. George W. Mackenzie, of Philadelphia, recently sailed from New York for Vienna on the Holland American liner Volendam with about fifty other physicians to take a postgraduate course in the study of the human ear and throat.

The seventy-eighth banquet of the Northern Medical Association of Philadelphia was held on May 23d. Dr. J. Solis Cohen was the guest of honor, having been a member of this Society for sixty-four years and a pioneer in laryngology.

Dr. Louis Ginsburg, of Johnstown, left that city in June to take a postgraduate course. Dr. Ginsburg will be married this month and will spend next year in Vienna, taking a special course in diseases of the eye, ear, nose and throat.

Dr. William S. Piper, of Clearfield, is leaving for Europe soon on a specially conducted tour under several of the professors of the Graduate School of the University of Pennsylvania. Instruction will be given in ear and eye work throughout the three months' trip.

Dr. R. E. Heacock, of Bethlehem, was reëlected president of the Eclectic Medical Association of Pennsylvania at their fifty-first annual session held in Bethlehem on May 29th. The Association voted $12,000 toward the new building of the Eclectic College at Cincinnati.

Dr. Cornelius M. Dailey, of Harrisburg, was wounded and Mrs. Anna Manbeck, of the same city, was killed on the morning of June 1st in the Doctor's office. Dr. Dailey is recovering from his injury in the Harrisburg Hospital, where a warrant has been served charging him with the murder of Mrs. Manbeck.

Dr. Frederick A. Rupp, of Lewistown, has just been promoted from major to lieutenant-colonel in the United States Medical Reserve Corps. During the World War he was surgeon for the 308th Ammunition Train and later was assigned to the base hospital at Savaney. Dr. Rupp was a delegate to the Democratic National Convention recently held in New York.

Health Director Krusen, of Philadelphia, recently announced that a bronchoscopic clinic is to be established in the Philadelphia General Hospital. The clinic will be similar to the one now being maintained in the Jefferson Hospital by Dr. Chevalier Jackson. Dr. Jackson and his assistant, Dr. William F. Moore, will serve as consultants in the new work to be undertaken.

The Public Health Committee of the city council of Philadelphia recently approved plans for a $4,000,000 rebuilding program at the Philadelphia General Hospital, and the establishment of a metabolic clinic for the treatment of diabetes with insulin. An appropriation of $5,000 for the metabolic clinic was recommended and Dr. Orlando Petty is to be made consultant in this work.

The prize-winning essay of the General Federation of Women's Clubs upon the subject, "What Do the Two Million Seven Hundred Thousand Federated Club Women Want from the Publishers?" was written by Mrs. John B. Roberts of Philadelphia. The prizes will be awarded at the nineteenth biennial convention of the Federation, which will be held at Los Angeles, California, from June 3d to June 13th.

Dr. George M. Dorrance, of Philadelphia, has resigned his chair as Professor of Surgery in the Woman's Medical College. Following Dr. Dorrance's resignation came those of his three assistants, Dr. J. William Bransfield, Dr. Eugene C. Murphy and Dr. H. R. McKnight. Dr. J. Stewart Rodman has been chosen to succeed Dr. Dorrance. His staff will include Dr. Hubley R. Owen, clinical professor; Dr. J. Ralston Wells, associate professor; Dr. B. B. Neubauer, assistant professor; Dr. Walter G. Elmer, in charge of orthopedic surgery, and Dr. Julia Hardin, anesthetist.

On May 27, 1924, the Lackawanna County Medical Society tendered a reception to Dr. Reed Burns on the occasion of the Doctor's departure for Honesdale, having retired from the active practice of surgery. Dr. Burns was graduated from the University of Michigan in 1867 and is eighty years of age. Many honors have been accorded him and he is rightly acclaimed as the dean of medicine in northeastern Pennsylvania. The Society was presented with a portrait of Dr. Burns, the gift of Drs. E. L. Kiesel and J. Norman White.

GENERAL NEWS ITEMS

The first annual meeting of the American Association for the Study and Cure of Cancer was held at the Drake Hotel, Chicago, Ill., on June 11, 1924. The Association was founded October 12, 1923.

The marriage of Dr. Frederick G. Banting, of Toronto, Canada, to Miss Marion Robertson of Elora, took place on June 4th. Dr. Banting is well known as the discoverer of insulin for the treatment of diabetes.

More than 250 brain and nerve specialists from all parts of the United States and many European countries attended the annual meeting of the American Neurological Association, which was held in Philadelphia recently. Thirty-eight eminent European, Asiatic and American neurologists were elected to honorary or associate membership.

Two appointments from European universities to the faculty of the medical school of Johns Hopkins University have been announced. Dr. J. W. McNee. of University College, London, noted for his publications on clinical medicine, particularly in military medicine and jaundice, is to be associate professor of medicine. Dr. Bela Halpert, who is first assistant to Prof. Otto Grosser at the University of Prague, is to be instructor in anatomy.

The United States Civil Service Commission announces an open competitive examination for physicians. Receipt of applications will close August 16, 1924. Applicants should at once apply for Forms 1312 and 2398, stating the title of the examination desired, to the Secretary, Third U. S. Civil Service District, Postoffice, Philadelphia, Pa. All who are interested should request a copy of form No. 586 (Unassembled), which gives all the information and instructions regarding the examination.

Recently many of the newspapers of the country have become interested in the fact that so many foreign physicians are flocking to the United States. In the past, desirable physicians from foreign countries were welcomed by this country, as there were comparatively few coming over. However, since the World War the number has been increasing rapidly and as many of these new arrivals are undesirables, both from an educational and a moral standpoint, many of them being unable to speak English, steps should be taken to make their examinations as rigid as those of our own men. This is necessary to protect the public against the incompetent or undesirable physician from abroad, and it is to be hoped that the Board of Medical Education and Licensure of the State of Pennsylvania will be mindful of this necessity.

THE

MEDICAL SOCIETY OF DELAWARE

ORIGINAL ARTICLES

EXTRANASAL CONDITIONS ASSOCIATED WITH SINUSITIS*

WM. F. BONNER, M.D.
WILMINGTON, DEL.

Among my patients, the following conditions have been caused by or associated with sinusitis: (1) Respiratory tract—subacute laryngitis. (2) Eyes—central scotoma, and change caused by thrombosis of the cavernous sinus. (3) Brain and nervous system—brain abscess, trifacial neuralgia, sphenopalatine neuralgia, neurasthenia and melancholia. (4) Ear—catarrhal otitis media and acute purulent otitis media. (5) Teeth—opening made into the antrum by extraction of teeth and changes in the floor of the antrum caused by unerupted teeth.

Many authors have spoken of bronchitis and asthma, which were relieved only by cleaning up the infected sinuses. The commonest condition of the respiratory tract is subacute laryngitis, which defies all efforts at cure, until the associated sinusitis is cleared up.

There has been much indecision among rhinologists, ophthalmologists, neurologists and brain surgeons as to the relation between sinusitis and optic atrophy or inflammation, but it is conceded by most that a central scotoma (enlargement of the physiological blind spot) is pathognomonic of sinusitis.

In San Antonio K. J. was referred by Dr. Homer T. Wilson. His right eye was swollen to an enormous proportion, to such an extent that the conjunctiva above and below the eye formed two extra flaps. Nearly the whole of the right side of his face was swollen and discolored. There was a profuse purulent discharge from both nostrils. As there was no x-ray machine in this hospital and it was impossible to move the patient, no x-ray pictures were taken. At first the fundus of the eye could be seen. There was no choked disc. Later it was impossible to see the fundus because of pus in the anterior chamber. The patient ran a temperature around 103 Fahrenheit and seemed very toxic. An autogenous vaccine was made from the pus from his nose. This vaccine, composed of staphylococci, caused an improvement from the first injection. The man lived but lost the vision in that eye. This condition was due to a thrombosis of the cavernous sinus.

In neurasthenia, as a rule, improvement of the sinuses helps locally, but not generally. In four cases of sphenopalatine neuralgia associated with sinusitis, one case cleared up with treatment of the sinusitis and local application of 2% silver nitrate; two cleared up after injection of the sphenopalatine ganglion with alcohol. The fourth case was treated at first for frontal sinusitis. While working he had a fainting spell; his head struck a desk when he fell forward and caused a hemorrhage from his nose and pharynx. I did not see this case for a month as I was out of the city. Then there was a noticeable difference in the patient. He had lost about twenty pounds in weight, he was nauseated constantly, had difficulty in standing, and had such a terrific headache on the right side that he was unable to sleep. Touching the area over the right sphenopalatine ganglion with 10% cocain caused a cessation of the pain for eighteen hours. Two days later the right sphenopalatine ganglion was injected with alcohol, which caused an improvement for a couple of days, when the symptoms returned with even greater severity. The patient was taken to the University Hospital for a consultation with Dr. Lewis Fisher, who suggested a brain lesion. X-ray by Dr. Pancoast showed a slight cloudiness over both frontal sinuses. Examination by Dr. Spiller suggested a brain lesion on the right side, and a choked disc appeared in both eyes. Dr. Charles H. Frazier operated and discovered an abscess of the right frontal lobe.

A patient referred by Dr. Jefferis complained of neuralgia affecting the right posterior superior dental nerve, a branch of the fifth or trifacial. He had an empyema of the right antrum of Highmore. This condition cleared up after a few irrigations of the antrum.

While stationed at Kelly Field, a patient with a severe melancholia was referred to me by the psychologist who was examining the enlisted men at the post. This man had an empyema of the antrum of Highmore of such severity that it was necessary to do a radical operation.

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*Read before the Medical Society of Delaware, Middletown, October 8, 1923.

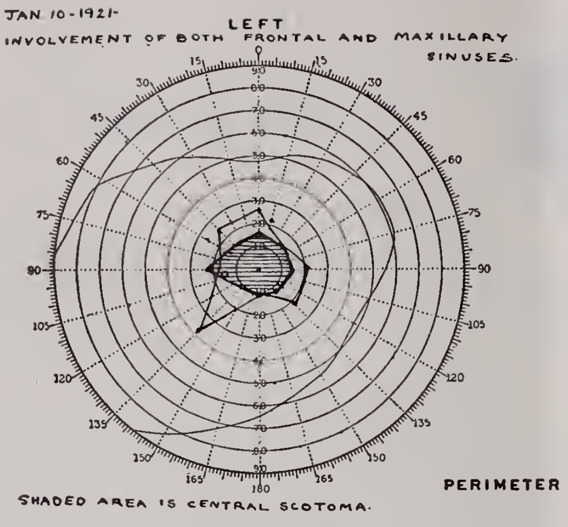

Figure I

Central scotoma of the left eye associated with empyema of frontal and maxillary sinuses (bilateral)

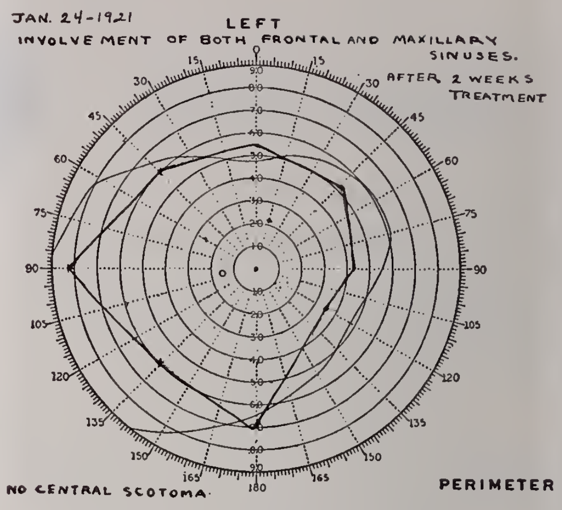

Figure II

Two weeks following operation: disappearance of scotoma and enlargement of field

There are two ways by which sinusitis can affect the ear, one in which there are chronic catarrhal conditions, which do not yield to treatment until the associated sinusitis has been cured. These charts show changes associated with this condition. The other way by which sinusitis can affect the ear is that pus can be forced through the eustachian tubes and form an acute purulent otitis media. A patient with sinusitis complained of excruciating pain over both mastoid processes, with drums that appeared normal in both ears. An x-ray showed a shadow over the right ethmoids and antrum and left frontal and antrum. The mastoid regions were normal. The next day the right drum ruptured, and the following day the left drum ruptured, with cessation of the pain.

J. Parsons Schaeffer in his book, "The Nose, Paranasal Sinuses, Nasolacrimal Passageways and Olfactory Organ in Man," gives a very illuminating description of the relation between the upper teeth and the antrum of Highmore. A patient after the extraction of the right upper third molar had an opening from the tooth socket into the antrum of Highmore. Before each meal he put some gauze into the tooth socket. A piece of this gauze was pushed into the antrum. An opening was made into the nasal wall of the antrum and thorough irrigation was done, but no gauze was found. Next day a nasopharyngoscope was introduced into the antrum but no gauze was found. It may have come out with some blood clots. The patient had an uneventful recovery. Another patient had an x-ray of the sinuses for diagnosis. In one antrum the floor was pushed up by an undescended third molar.

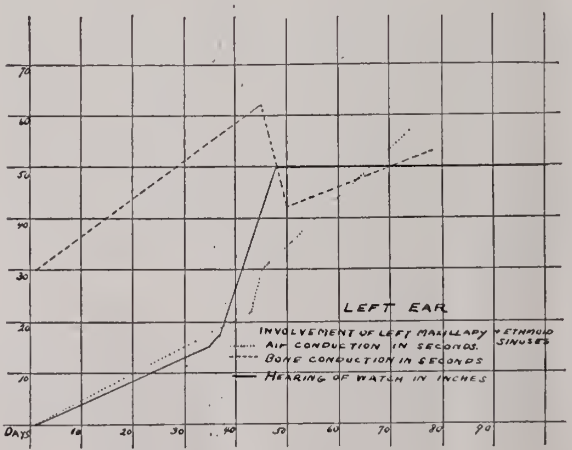

Figure III

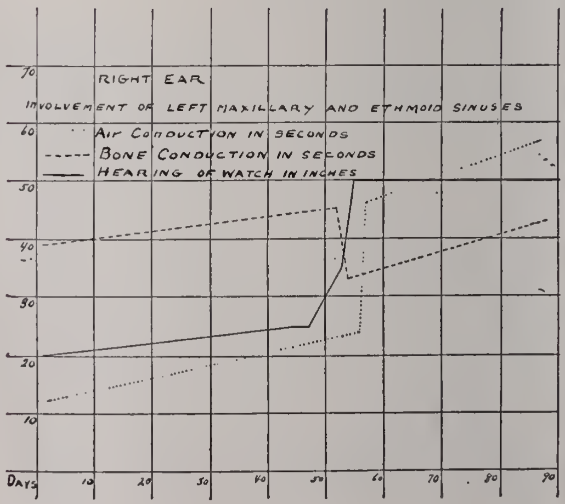

Figure IV

CONCLUSIONS

1. The commonest respiratory complication is subacute laryngitis.

2. (a) The relation of optic atrophy or inflammation and sinusitis is undecided. (b) Central scotoma is a pathognomonic symptom of sinusitis. (c) Changes in the eye can be caused by thrombosis of the cavernous sinus.

3. Brain abscess, trifacial neuralgia, sphenopalatine neuralgia, neurasthenia and melancholia may be secondary to sinusitis. Watch for other symptoms that may be indicative of brain involvement in the patient with symptoms of sphenopalatine neuralgia.

4. Sinusitis may affect the ear in two ways, chronic catarrhal changes and purulent conditions.

5. There is an intimate relation between the teeth and the antrum of Highmore.

THE PREVENTION OF BLINDNESS*

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WILMINGTON, DEL.

One of the most important movements which has, during the last few years, occupied the attention of physicians, political economists, social workers, and others interested in public welfare, is that which concerns itself with the prevention of disease.

It has been recognized that none of the movements looking towards the conservation of valuable utilities compares in importance with the saving of human life and the preservation of human efficiency, and among these, the preservation of useful sight is one of the most important.

While through preventable causes resulting in death, the individual is removed from the sphere of social activities, should he lose his sight he is, in the majority of instances, not only no longer able to maintain himself independently, but as a rule, this is associated with normal health and he may live for many years dependent upon others. Moreover there is no calamity that is more deplorable than that resulting from blindness.

More than a quarter of a century ago it was shown that nearly half of the existing blindness was due to conditions which might have been prevented, and careful investigations in recent years have shown that this estimate has not been exaggerated. It is therefore of great importance, both from an economic and a humane standpoint, that measures should be instituted, whenever possible, to prevent such destruction of human eyes as will result in blindness or in diminution of sight so materially as seriously to interfere with the useful occupation and comfort of one so afflicted.

In 1910 it was estimated that the total number of blind in the U. S. A. was not less than 118,000. In our use of the word blindness the term will be considered to include all those cases in which the sight is so diminished as to preclude the use of the eyes for any practical purpose.

While there are a number of causes of blindness occurring in infancy, only the most important ones will be considered for the moment.

The congenital cases include those born into the world blind, and those born with a condition of the eyes which leads to blindness not yet developed. These conditions are the result of constitutional diseases of a specific nature which a diseased parent transmits to the offspring.

The hereditary diseases of the eyes which give rise to blindness are of the nature of defects or malformations in some of the eye structures and which existed in like character in a parent or more remote ancestor. An interesting illustration of the force of heredity is that of a night-blind family residing in southern France. In night-blind people the eye is insensitive to light which falls below a certain degree of intensity and such people are constantly blind in failing daylight or moonlight. The records of this case begin with a certain Jean Mongart who was born in 1763 and suffered from night-blindness, and then end for the present with children who are but a few years old. Particulars are known of two thousand of the descendants of Jean Mongart through ten generations and nearly three centuries, and there is no sign that long continued marriage with folk of normal vision has produced an amelioration of the night-blind state.

Hereditary eye troubles most often occur when parents have been attacked with eye disease, either congenital or acquired, in infancy, and it is not necessary that the progenitor himself shall have an eye affection to influence the eyes of his offspring; he may be the medium of transmission of the tendency from a more remote ancestor. The influence of heredity upon myopia is very marked.

In considering the prevention of hereditary blindness there is but one way in which the begetting of defectives may be stopped. It is the duty, as it is the right, of the state to protect its citizens. Every child has the right to be well born. If the rights of person or property of a child, and more especially of an infant, be put in jeopardy, the law representing the state takes upon itself to stand between that child and the danger with which it is threatened. His parents or his guardians may not maltreat or abuse him; they may not misappropriate his estate if he has one. He is not permitted to labor while of school age lest he be deprived of the privileges of education, while still a child and thereby lose a right to which the state considers him entitled. It is a capital crime to deprive him of life while he is still unborn. It should be equally a crime to deprive him of his eyes before he comes into the world.

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*Read before the Medical Society of Delaware, Middletown, October 8, 1923.

The child even though yet unbegotten is entitled to a whole and sound body in which to live, and the state should, so far as possible, so safeguard his development that he has at least an even chance to secure one. But, shall not consideration, it is urged, be given to the unfortunate men and women whose lives are made still darker by depriving them of the joys of the companionship of married life? There is but one answer, and that the further question: Shall one life lie in the balance against an unending progeny of sufferers, who must continue to bear the same burden without end?

If a man has ten children, and seven of them blind, what extenuation would the fact of his desire for happiness be? Yet that is exactly the risk that a man born without eyes takes when he marries, that 70% of his children will never see the light of day. The conclusion, then, is that the knowledge of the facts of the transmissibility of hereditary blindness should be more widely spread.

The marriage of these so afflicted, if permitted at all, should never be entered into without the fullest understanding on the part of those contracting such marriages, as well as those responsible for them, of the results which may be expected to follow.

In addition to these precepts the law should be invoked to prevent the herditary blind from marrying. A clean bill of health should be required as security of the physical fitness of the contracting parties to assume the responsibilities of parenthood. Should hereditary blindness be proved it should be an absolute disqualification. It is probably at present impracticable to secure the passage or enforcement of such a law, but the moral force of a wider knowledge of the transmissibility of inherited blindness would not be without effect.

The congenitally blind should be told that even though they may have normal children, it is likely that some of them may be blind. They should be warned against marriage of their children into families tainted with the same defect. They should be told that sisters of men suffering with congenital wasting of the optic nerve, though they themselves be normal, may transmit to their children, who in turn may carry it to another generation. The laws of heredity may be cruel and seemingly unjust but they are immutable, and finally there is no gift within the powers of the gods that begins to measure up in value with a clean and fine inheritance of body and mind.

Ophthalmia neonatorum, as we all know is a condition occurring a few days after birth. At one time it was a frequent thing for children to have it, because the cause and prevention were unknown. In this day there is little excuse for this disease. Silver in certain forms will prevent the propagation of any gonocococci present.

Every case occurring shows carelessness somewhere. Either the mother was not properly prepared for delivery or the silver preparation was not used, or was at least improperly used. Every physician must insist upon the use of this ounce of prevention in every single case he attends, no matter how high or lowly the patient. It is not infrequent to see children of the rich suffering from this condition, because the attending physician thought that to use the drops would be an insult to his patient. Far better to insult the patient and whole family, and their children's children, than to lose one single eye through such carelessness.

Malnutrition in children leads to development of pathologic conditions in all parts of the body and of course the eyes are prone to changes. You all know and recognize the rather severe conjunctivitis attending these cases. It may be so marked that ulcers appear on the cornea and if not relieved promptly, other ulcers occur and finally form scars of such density as to ruin the sight forever, even though the underlying structures may be good. When you see a child with a running nose, watery and red eyes, that can't stand the light, that child is poorly nourished, has probably been eating too much sugar or sweets and needs attention. The eyes will respond quickly when the general condition is remedied. If neglected too long, permanent changes take place in the cornea and subsequent treatment is of little value as far as restoration of vision is concerned. The time to save such eyes is in the beginning. All such cases of blindness may be prevented. Plenty of good substantial food, fresh air, milk, and a little iron and arsenic work wonders. A Wassermann test should be taken in all such cases.

The eyes often tell of general disease, sometimes months before the patient or family physician is aware that there is anything amiss. It is not infrequent to find a healthy-looking robust individual applying for examination of the eyes because of a gradual impairment of vision. The ophthalmoscope sometimes shows extensive retinal changes, evidences of kidney lesions, heart affections, and chronic sepsis or focal infection. If taken in time the underlying cause may generally be removed, and the changes in the eyes stopped.

Some opticians are often the cause of cases of blindness, because they cannot recognize pathologic conditions, and spend months trying to improve the sight by frequently changing the glasses, and then finally when the patient is almost blind and they cannot obtain any result they suddenly think it might be well to have the patient consult an oculist, and the specialist must then bear the burden and inform the patient of the uselessness of any further efforts in his behalf. I have recently had two cases that received actual medical treatment from an optician, with a family physician in attendance.

No one will deny the importance of focal infection, and yet there is not a day that eyes are not sacrificed because of the overlooking of this important factor in the production of pathological conditions in the eye.

Diseased tonsils, abscessed teeth, pyorrhea, chronic sinusitis, chronic osteomyelitis and pyelitis, are the usual foci of infection. Some are so pronounced that a layman could almost make a diagnosis, and still some of our physicians scoff at the idea of cleaning up these foci, and say that in this day and age specialists are too radical and want to operate on everything, and rather discourage the patient.

It is true that after the removal of the tonsils, or the extraction of teeth or both, the symptoms may not disappear in some cases. My answer to that is that the real focus of infection has not been found.

It is remarkable the rapidity with which some cases of impaired vision bordering on blindness clear up after the removal of the focus of infection.

Industrial plants are doing much to prevent cases of blindness. Nearly all of them employ trained people in their dispensaries, and if they are not able to take care of eye injuries, the patients are referred for special attention. Little time is lost in having injuries attended to, which of course lessens the possibility of infection and the loss of sight. The plants have reduced the number of eye injuries to a very low percentage in the last few years, by supplying the men with goggles and safety devices.

Our school authorities have long since realized the importance of having the eyes of all pupils examined. By so doing they have increased the efficiency of the student and have lead to the discovery of eye conditions and errors of refraction, that if unrecognized might result in impairment of vision or even blindness.

It is a great source of pleasure to know that my associate, Dr. J. A. Ellegood, was the pioneer in this work in Delaware. He devoted a lot of time to lecturing and giving lantern demonstrations in the towns of the state. I am glad that he sees the fruits of his efforts.

I am not desirous of boring you with any detailed account of the cause, course, diagnosis and treatment of any specific case. I merely want to present to you the most frequent causes of blindness and I urge that all of you be on guard for them, and join the crusade for the prevention of blindness.

TUBERCULOSIS OF THE EYE*

W. O. LaMotte, M.A., M.D.

Wilmington, Del.

Our present views regarding tuberculosis date from Koch's discovery of the bacillus. Focal infections of the disease, however, have not been fully appreciated. The great obstacle in recognizing tuberculous infections, as far as the eye is concerned, has been in not finding tuberculosis where we expected to find it; that is, in the lungs, hip joints, spine or lymph glands. Verhoeff by injecting dead tubercle bacilli in the anterior chamber and the vitreous of animals has found a certain number develop episcleritis, scleritis and keratoscleritis. Edward Jackson says many of the patches of choroidal atrophy are patches left by healing of focal infections of tuberculosis. Recurring hemorrhage from the retinal vessels into the vitreous of the young and middle-aged, causing temporary and sometimes permanent blindness, are often from tuberculous lesions in the retina, or caused by tuberculous toxins acting on the retinal vessels, usually the veins.

A woman about thirty had retinal hemorrhage in one eye that was so extensive that all sight but hand movements disappeared. The blood became absorbed, vessels disappeared, leaving nothing visible in their place but white lines, and for months the eye was practically blind. She was in a large hospital and was examined in several departments, but we could find no cause for this condition. I mention this case because to me it was of great interest in that there was a great formation of new vessels, many small ones wiggling out in the vitreous, and return of sight to normal, with apparently perfect health otherwise. Since I treated that case, I have often thought of its possible tuberculous character, that with nothing but the general good care the patient took of herself, apparently resulted in a cure.

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*Read before the Medical Society of Delaware, Middletown, October 8, 1923.

Not a few cases of phlyctenular keratitis are tuberculous and will clear up only by the use of tuberculin. Even in interstitial keratitis we must not forget that sometimes the patient has to be treated for tuberculosis before he can be benefited. Or we may have a tuberculous eye, the same as a syphilitic eye, etc., which may require elimination of an infection in a tooth, a tonsil, gall-bladder, gastro-intestinal tract, etc., before we succeed in having any favorable result.

It is not the purpose of the present paper to discuss in detail the pathology and treatment of tuberculosis of the eye, except that which may be found in the report of some cases. The purpose is rather to emphasize the importance of very thorough study of these pathologic conditions before it is too late.

Case 1: Single woman, thirty years of age, came for treatment in February, 1923, for an episcleritis with which she had been suffering for two months. She also had at times swelling of ankles and general petechiæ. She had been seen and examined by several physicians. Her tonsils had been removed in 1922. Sinuses and teeth negative, hemoglobin 84%, R. B. C. 4,100,000, W. B. C. 7,000, Wassermann negative. Heart, kidneys, and lungs negative. The von Pirquet test in this case was strongly positive. Very small doses of hypodermic injections of O. T. were started. Pain disappeared and the eye became quiet. During my absence, at one of the treatments the syringe became detached from the needle and an overdose of tuberculin was given. The eye flared up and a severe case of kerato-iritis developed. The tuberculin was discontinued and with local treatment this complication cleared up. In September the eye again became inflamed and tuberculin treatments were again started. The eye soon showed improvement and at present is quiet. In connection with this case, some of you will remember de Schweinitz's warning a year ago against too large a dose of tuberculin and his citation of some cases in which, as he said, there was an explosion.

Case 2: Man 24 years old, in July, 1918, gave a history of having had sore eyes off and on since he was three years old, and which for two months had been so inflamed he had to remain indoors with head in his hands most of the time. He was treated by a physician who, after two months, still was unwilling to have a consultation with an oculist. He was discharged. The eyes had numerous phlyctenules around the limbus. The corneæ were generally hazy and there were some corneal ulcers. The eyes were very red and painful. Physical examination showed nothing else except very large tonsils. The von Pirquet test was strongly positive. Tuberculin treatments were started in August and continued until November. By October 4th, or just two months after injections were started, all inflammation had disappeared, and the patient was as well or better than ever. The treatments were given again in June, July, and August the following year. The vision is much impaired by corneal opacities, but the patient has been working since 1918 and weighs over two hundred pounds, and has had no further eye trouble whatever.

Case 3: A girl eighteen years old came in May, 1922, with an inflamed left eye, conjunctiva much congested, cornea hazy with macule near center and small vessels extending over limbus for 2 mm. between six and eight o'clock. There were infiltrations of both corneæ and all the lids were inflamed. History of sore eyes off and on all her life. There was acne of face and purulent nasal discharge. Tonsils enlarged. Wassermann negative. Strongly positive von Pirquet reaction. Tuberculin treatment was given. In six weeks there was no photophobia and no inflammation and the skin condition had improved and purulent rhinitis disappeared. She returned in September of this year with a red spot on the temporal side of the right cornea and is now being given tuberculin. At present, after a few injections, there is scarcely any redness at all. The patient states that since the first treatments over a year ago, she has felt better than she ever did before.

Case 4: In December, 1914, a single woman, school teacher, 50 years of age, came with a history that about six months before, blurring and seeing spots began, which progressed until there were times when she could not even see in the looking-glass. She had lost weight, was very weak, could sleep but very little, and was very nervous. A great deal of her work was done by other teachers. At the time her eye trouble began she was refracted by an optician and bought a pair of glasses. In a few weeks she returned to him and stated her eyes were getting worse. She was told the eye condition was caused by nerve and muscle trouble and was instructed to use hot compresses and later was sold another pair of glasses. Her vision when she came to me was less than ½, the same with and without glasses. No lens was of any use. Fundus examination was unsatisfactory because of blurring, posterior synechiæ, and many vitreous opacities. There were also dilated ciliary veins, ciliary flush, and a catarrhal conjunctivitis. Under atropin the pupils dilated very irregularly, some of the synechiæ holding on, others breaking away leaving pigment on the lenses. Later on, after treatment, when the fundus could be seen, large patches of retinochoroiditis were found. The patient had general pallor, the eyes were red, she was weak looking and anyone could see she was a sick woman. Wassermann and luetin tests were negative, and the urine showed nothing of importance. There was some trouble around the gums and endamebæ buccalis were present in large numbers in the pyorrhea pockets. These cleared up with emetin injections, and with general and special treatments the acute eye condition subsided after several weeks. The patient felt better and could work as well as ever and glasses brought her vision up to 2/3.

In July, 1915, the left eye became inflamed, but this soon subsided under treatment. She did fairly well until April, 1919, when both eyes again became inflamed and in December vision dropped to 5/30 + in right eye and 5/12.5 in left. The von Pirquet test was made in January, 1920, and was positive. The patient was examined by an internist who found no contra-indication against the use of tuberculin, which was started and continued until October. She stated she felt much better and said, "I have never passed a summer before that my eyes didn't flare up." She later said it was the first winter for years she had escaped colds. Vision, however, could not be improved with glasses and it gradually got worse. Cataracts developed and August 7, 1922, V. O. D. was 3/60, and V. O. S., fingers at one foot. In October I did a cataract extraction of the left eye. A secondary cataract followed and August 16th of this year I tried a capsulotomy, but the tissues were so tough I had little success. August 30th I removed all the capsule and organized tissue that was in the way and now, with correction, vision equals 6/15, and with addition she can read newspaper print. Here is a case of tuberculous uveitis in which, if she had not temporized with an optician and the diagnosis had been made early enough, she might have been saved suffering, incapacity and badly crippled eyes.

In conclusion, I will quote some advice de Schweinitz has given: "Should the general practitioner refer a patient to an ophthalmologist, for instance, he naturally and properly indicates the problem in which he wishes help; that is, are there ocular conditions to account for headache, nausea, gastric disorders, insomnia, excessive nervousness, etc., or symptoms suggesting increased intracranial pressure, or are there ocular indications of cardiovascular disease, renal affection, metabolic disturbances, etc.? But should the ophthalmologist in his routine work discover, let us say, an eye-ground lesion indicating a somatic malady, although the reference was for the correction of refractive error, and report the same, it is surely incumbent on the practitioner to investigate, and not to be offended. The reverse of this relationship is of course equally true. Each practitioner, or so-called specialist, must approach the problem in a spirit of coöperation, with the good of the patient as his paramount duty. If this rule is followed, neither will lose the respect of the other, and both will enhance the confidence of the patient. Coöperative medical work must be played fairly, and the success of it depends upon working in 'perfect sympathy and uncontending equity.'"

Industrial Trust Bldg.

EDITORIAL

A MEDICAL CARICATURE

"The Portrait of a Doctor," as painted by L. M. Hussey in the *American Mercury*, is not an American portrait but a caricature fit for a Sunday supplement, in company with "Slim Jim," "Relentless Rudolph," "Mutt and Jeff," and other well-known personages.

Dr. Sinus, the sitter for the portrait, knows nothing about medicine and cares less. The only thing he appreciates in the *J. A. M. A.* are the jokes. As to auricular fibrillation, he retains some vague memory that it is some sort of heart condition, "or, did it have something to do with the inner ear?" facetiously remarks the author. In the domain of therapeutics, Dr. Sinus "always prescribed a flat, brownish pill, known in the catalogue of the pharmaceutical manufacturer as "cardiac fortier." The doctor dispensed these himself, buying them in lots of 5,000.

A paper on "A Quantitative Determination of Bilirubinemia" brings forth the reflection that it is a product of one of these "laboratory men, who knew nothing of sickbed practice and were forever entertaining themselves with the invention of recondite tests and reactions." If anything is amiss with the patient's liver, Dr. Sinus prescribes a dose of calomel and lets it go at that.

Mr. Hussey (or is it Dr. Hossey?) stages a patient who is developing typhoid fever and on whom Dr. Sinus makes a diagnosis of bronchopneumonia, after going through the "ritual of ausculation." The wheezings, whistlings and cracklings reaching his ears, mean nothing to him, and moreover, "he scarcely gives a damn." He employs the stethoscope for effect only. As the patient fails to improve on *"mist glycyrrh. comp. with ammon. chlor.,"* and complains of a pain in the right lower quadrant, Dr. Sinus concludes that it is "appendicitis," the inflammation, as he eruditely explains to the patient's wife, having left the lungs and invaded the appendix. He calls in a young surgeon, Dr. Ulnar, who owes his prosperity to the fact that he "always takes care of the physician"—financially, that is. The surgeon readily agrees on the diagnosis (in fact, he had already agreed over the phone, when Dr. Sinus explained the case to him), the patient is removed to a second-rate hospital, operated upon, and a perfectly normal appendix removed. (This, by the way, is not correct, as the appendix is never perfectly normal in typhoid fever.) The surgeon is surprised, but puts balm on his wounded pride by stating to Dr. Sinus that "it's a fine thing for anyone to be rid of an appendix" —as a prophylactic measure.

The patient develops postoperative pneumonia and dies.

In true Mutt and Jeff style, Dr. Sinus slaps the surgeon in the face by the assertion that his diagnosis of bronchopneumonia was correct, to which Jeff (I mean Ulnar) replies maliciously that the patient had "typhoid fever," as determined by a blood test. This knockout throws the doctor into a state of grave contemplation of his injured prestige and the dire consequences of a diagnostic blunder, the loss of his fee being the direst.

Such is the portrait of what purports to be the average American doctor! Lazy, ignorant, conceited, dishonest, avaricious, without a grain of human sympathy. Is it true? If not, and we know from observation what a miserable libel it is on the average physician and surgeon, how mean and contemptible it is to besmirch a dignified and useful profession and undermine the confidence the layman should have in his physician!

Another article, which appeared recently in *Harper's Monthly,* was of the same kidney (or spleen, should we say?) and was directed against the surgeon. This one, in an equally influential periodical is aimed at the physician. The two, written by men who should know better, can only do evil, by degrading an altogether respectable calling in the eyes of the laity, and giving comfort and sustenance to the hordes of parasitic quacks. Defects there are in medical practice, and who does not know it? Individual physicians and surgeons may possess ugly traits of character, as do the members of any other profession, journalists included. But is this a justification for the muckraking campaign which tends to undermine whatever influence for good the medical profession has? A. R.

BOOKS RECEIVED

The Human Testis. Its gross anatomy, histology, physiology, pathology, with particular reference to its endocrinology, aberrations of function and correlation to other endocrines, as well as the treatment of diseases of the testes and studies in testicular transplantation and the effects of the testicular secretions on the organism. By Max Thorek, M.D., Surgeon-in-Chief, American Hospital; Consulting Surgeon, Cook County Hospital, Chicago, Ill. 308 illustrations. Philadelphia and London: J. B. Lippincott Company, 1924.

Fifty Years of Medical Progress: 1873-1922. By H. Drinkwater, M.D., Edin., M.R.C.S. Eng., F.R.S.E. With 37 illustrations on 35 plates. New York: The Macmillan Company, 1924.

Transactions of the College of Physicians of Philadelphia. Third series, Volume 45. Philadelphia: Printed for the College, 1923.

Operative Surgery. Covering the operative technic involved in the operations of general and special surgery. By Warren Stone Bickham, M.D., F.A.C.S., former Surgeon in charge of General Surgery, Manhattan State Hospital, New York; former Visiting Surgeon to Charity and to Touro Hospitals, New Orleans. In six octavo volumes totaling approximately 5,400 pages with 6,378 illustrations, mostly original, and separate Desk Index Volume. Volume 4 containing 842 pages with 772 illustrations. Philadelphia and London: W. B. Saunders Company, 1924. Cloth, $10.00 per volume. Index Volume free.

The Diseases of the Breast. By Willmott H. Evans, M.D., B.S., B.Sc., F.R.C.S., Consulting Surgeon to The Royal Free Hospital. With 106 illustrations, of which 15 are colored. London: The University of London Press, Ltd., 17 Warwick Square, E. C. 4, 1923. Price 27/6 net.

First Steps in Organizing a Hospital. An exposition of ideals and principles incident to the inception and organization of a hospital. By Joseph J. Weber, M.A., Editor, *The Modern Hospital.* New York: The Macmillan Company, 1924.

Hospital Organization and Operation. By Frank E. Chapman, Director, Mount Sinai Hospital of Cleveland. New York: The Macmillan Company, 1924.

New and Nonofficial Remedies, 1924. Containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1924. Chicago: American Medical Association, 535 North Dearborn Street.

Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association for 1923 with the comments that have appeared in the *Journal.*

Dislocations and Joint Fractures. By Frederic J. Cotton, M.D., Visiting Surgeon to the Boston City Hospital; Associate in Surgery, Harvard Medical School. Second Edition, reset. 745 pages with 1,393 illustrations from drawings by the author. Philadelphia and London: W. B. Saunders Company, 1924. Cloth, $10.00 net.

Pathological Technique. A practical manual for workers in pathological histology and bacteriology, including directions for the performance of autopsies and for clinical diagnosis by laboratory methods. By Frank B. Mallory, M.D., Pathologist to the Boston City Hospital; and James B. Wright, M.D., Pathologist to the Massachusetts General Hospital and Assistant Professor of Pathology, Harvard Medical School. Eighth edition, revised and enlarged. Octavo of 666 pages with 180 illustrations. Philadelphia and London: W. B. Saunders Company, 1924. Cloth, $6.50 net.

BOOK REVIEWS

A PRIMER FOR DIABETIC PATIENTS. By Wilder-Foley-Ellithorpe. Second Edition, 12mo., pp. 119. Philadelphia: W. B. Saunders Co., 1923. Cloth $1.50.

The authors, from their practical experience in the Mayo Clinic, feel the need of a primer to place in the hands of diabetic patients. The subject matter is well covered in a brief form and the manual suits the need of patients of average intelligence.

Beginning with a chapter descriptive of the disease it carries the reader successively through sections on the urinary tests for sugar and diacetic acid, the method of weighing and measuring food, the food value of various diets, the use of diet in treatment as well as the newer forms of insulin administration. The later sections deal with the special care of the teeth, the skin, personal hygiene and elimination, together with menus and recipes and tables of food values.

The authors are to be commended upon the admirable way in which the facts are presented in a concise form. The language is simple, and as a whole, the book is unusually readable and interesting to the lay mind as well as to the profession. The menus provided give opportunity for changing the diet, which seems to be the principal factor in preventing patients from properly attending to their dietetic requirements.

C. S. M.

DIAGNOSTIC METHODS; A Guide for History Taking, Making of Routine Physical Examinations and the Usual Laboratory Tests Necessary for Students in Clinical Pathology, Hospital Interns and Practicing Physicians. By Herbert Thomas Brooks, A.B., M.D., F.A.C.P. Publishers: C. V. Mosby Co., St. Louis, 1923. Fourth Edition, pp. 106. Price $1.75.

The fourth edition of this little book admirably fulfills the purpose for which it is intended, namely, for medical students, hospital interns and other physicians who have a limited amount of time, only, to give to laboratory work. It is advised by the author that, along with this, some extensive work on clinical diagnosis be used as a reference work.

The following is covered in the volume: Outline for history taking; physical examination of the patient. The method for laboratory examination of the following is briefly but concisely described: the sputum, urine, gastric contents, blood, intestinal contents, serous fluids. All unnecessary and obsolete tests are omitted. The technic of staining and examination of smears, and the most important exudates is clearly outlined. The Wassermann reaction, the complement fixation test for gonorrhea and tuberculin diagnosis are briefly but comprehensively explained. Apparatus and chemical reagents necessary for a physician's laboratory are given.

The book is an excellent one for the busy practitioner doing his own routine laboratory work. J. V. K.

METHODS IN MEDICINE. The manual of the medical service of George Dock, M.D., Sc.D., formerly Professor of Medicine, Washington School of Medicine. By George R. Herrmann, M.D., Ph.D., Instructor of Medicine, University of Michigan. Cloth. Octavo of 521 pages. Illustrated. St. Louis: C. V. Mosby Company, 1924. Price $6.00.

This book aims to furnish for the medical members of hospital resident staffs a readily accessible and thoroughly comprehensive manual containing in detail all the methods, tests and duties essential to the routine of a large medical organization. It represents a system of organization which "has proved successful in the medical service of Professor George Dock at the Robert A. Barnes Hospital, St. Louis, and embodies many ideas of the Precedent Book of the medical service at the Peter Bent Brigham Hospital, Boston," and in the words of Professor Dock, "originated in some brief and simple suggestions for the House Staff early in my hospital service."

Part 1 covers Duties of the Medical House Staff; Part 2, Special Laboratory Methods; Part 3, Dietetic Methods; Part 4, Therapeutic Methods; Part 5, Recording, Graphic and Charting Methods, Composite History, with all Standard Typical Charts, the last including 77 pages of various charts, well planned and executed, and highly interesting. The volume bears on every page the practical, accurate and scientific stamp of high medical authorship and is carefully and clearly printed.

As the first of its type published, it should arouse lively interest in hospital and medical institutional circles as a model for the visiting staff in the way of an adjunct or resource in providing continuously for intelligent coöperation of the interns at all times, and especially when in the absence of procurable authorization of superiors the interne must be self-reliant. How often has the new interne suddenly confronted by a critical emergency, in hurried panic hastily perused all the monographs within reach for knowledge pertinent to the proper management of the case in hand, with results comparable to the fruitless search of Voltaire's Mahometans for their missing Prophet in Heaven?

The insistent admonitions of ethical conduct toward physicians previously handling admitted cases cannot be too highly commended and should be more largely followed. Amid the mass of commendable contents, the many detailed diet lists are particularly impressive to one who realizes the true necessity of depending upon diets that can be exactly analyzed as to protein, fat and carbohydrate percentage, and caloric values.

Every hospital will find it highly advantageous to include a copy of this scholarly scientific volume in its library.

THE CARE OF THE BABY. A Manual for Mothers and Nurses, containing practical directions for the Management of Infancy and Childhood in Health and Disease. By J. P. Crozer Griffith, M.D., Professor of Diseases of Children in the University of Pennsylvania. Seventh Edition, thoroughly revised. 12mo of 478 pages with 104 illustrations. Philadelphia and London: W. B. Saunders Company, 1923. Cloth, $2.50 net.

Any work that appears a seventh time has thereby sufficiently demonstrated its popularity. The book is printed legibly and the language employed is simple and easily understood. The contents comprise: "Before the Baby Comes," "The Baby;" its growth, toilet, clothes, feeding, sleep, exercise and training (physical, moral and mental), a consideration of its nurses and its rooms, and over 150 pages are devoted to "The Sick Baby." The nineteen-page index is well compiled, rendering reference to any desired topic an easy task. An appendix contains a grouping of Dietary, Remedies for Local Use, Remedies for Internal Administration, and Miscellaneous, the last including Massage, Table of Equivalent Measures, Table of Proportionate Dosage at Different Ages, Dose List for Children One Year Old, and List of Articles for Medicine Closet. Dangerous articles and those intended for external use are carefully designated and the mother or nurse is constantly reminded throughout the work that any measure followed is with the idea of supplementing and not of supplanting the physician, who, whenever it is possible, must be the adviser.

Such a complete manual as this from the hands of an author of the long and meritorious pediatric experience of Dr. Griffith can well be entrusted to the well-balanced and thoroughly responsible mothers or nurses, who have the common sense to know their true limitations and that they must not encroach too far into the domain of medicine. It will, in its many detailed instructions, recipes and descriptions, prove a handy help to the physician who need only refer to and mark the matter of interest at the moment, whether it be how to fold a diaper, to make barley water, or to prepare the artificial food mixture desired. Ignorance of many a trifle has made very sad history. For instance, in the eighth century was born Constantine, the Fifth, Emperor of the Eastern Roman Empire, the abolisher of image worship and the first suppressor of monkery, who if he had been efficiently diapered would not have polluted the baptismal font and come down to us historically as Constantine Copronymus.

One is a little disappointed that the Sylvester method of resuscitation from drowning is described to the exclusion of the Schaefer prone method, which is preferred by many. No reference is made to dried milk, which is entitled to a place in feeding, at least in emergency, in the opinion of many.

The student and the physician, in the perusal of this readily absorbed volume, will reinforce previous kindred knowledge and pick up many an idea that has been forgotten, or that has not been impressed upon them, or that may never have been gathered in their experiences. In no domain of medicine are the little things of more importance than in pediatrics, and a careful reading of this manual will demonstrate that the author has taken great pains to let no little matter of practical importance escape. The illustrations are apposite and clear. H. P. A.

SURGICAL CLINICS OF NORTH AMERICA. Kansas City number. December, 1923, Vol. 3, No. 6. W. B. Saunders & Company, Philadelphia and London.

The Kansas City number of Surgical Clinics of North America is contributed to by sixteen different surgeons of Kansas City; in all, there are thirty-three articles which cover a wide range of surgery. The cases have been well selected, described and treated in detail, and many of them are well illustrated. There is also a complete index to the entire series of the year incorporated in this issue. L. D. E.

CLINICAL LABORATORY METHODS. By Russell Landram Haden, M.A., M.D., Associate Professor of Medicine, University of Kansas, School of Medicine, Kansas City, Kansas. Formerly Director of Laboratories, Henry Ford Hospital, Detroit. St. Louis: C. V. Mosby Company, 1923.

In the preface the author states, "This little volume is presented to physicians and laboratory workers as a series of procedures which have been thoroughly tried out and found to give accurate results."

The book is primarily one of technic and gives those methods which the author has found reliable and with which he has become familiar. There is no discussion concerning the subject matter and in many places the brevity of the interpretation of the test would make reference to another text necessary for explanation.

While the book contains tests which would make the ordinary clinical laboratory workable, a purely technical text to be of real value should have clear-cut directions with full interpretations and as many different tests for each procedure as are available in the literature to-day.

The author has given his experience with clinical laboratory work and it would seem to the reviewer has added one more manual to an already long list rather than a book which might replace several that are already obsolete.

There are 294 pages, including the index, on heavy book paper with clear-cut type, and the illustrations are mostly good. R. A. K.

PRINCIPLES OF VITAL STATISTICS. By I. S. Falk, Ph.D., Department of Public Health, Yale University. Octavo, illustrated, pp. 258. Philadelphia: W. B. Saunders Company, 1923. Cloth, $2.50.

The author introduces his book with a Foreword by Professor C. E. A. Winslow. The Foreword states very clearly the purpose of the book, namely, that the entire subject matter deals with demography from the standpoint of an elementary textbook, only touching such broad underlying principles in a manner to make them clearly understood by the reader who lacks extensive training in mathematics. The work itself is a practical outline not only of the principles but of the results obtained by the study and use of vital statistics. Discussion of theories is carefully avoided but references interspersed through the text give ample opportunity for collateral reading for those interested in a particular phase of vital statistics.

The question of comparative death rates and some of the errors into which students may fall are very carefully and particularly illustrated by concrete examples. The question of birth and death rates, which include nonresident births or deaths, is carefully considered as well as the factors which may influence comparative death rates from certain specific diseases. Consideration is given to the comparison of age groups and mortality from certain diseases which may affect primarily a definite age group, as compared with a death rate based upon the total population. For example, the cancer mortality which affects principally the middle and later adult life, cannot have a death rate based on a population including the earlier ages as well as the extreme ages of life. One case is sighted in which a city has grown within the past decade over 100% and has in the same period a remarkable cancer death rate. The amateur statistician, it is pointed out, would conclude this as a favorable factor, whereas, in the final analysis, it is found that a large number of people of marriageable age have been attracted to this city, and correspondingly, there has been a very high birth rate which gives an abnormal proportion of its population among the lower age groups. In the final test, this has the tendency to lower the cancer death rate if based on the total population, but, when corrected for the age distribution, the same city shows a cancer death rate not unsimilar to that of any other city.

Dr. Falk developed similar examples, and, in a very easily understood manner, instructs the young statistician or health officer how to determine not only the mortality rate, birth rate and morbidity rate, but what is far more important, presents certain charts, diagrams, and explanations which aid those interested in public health matters in a rational interpretation and a reasonable application of these data to the administration of public health measures.

As a whole the Principles of Vital Statistics, as discussed by Dr. Falk in this small textbook, is one of the clearest and best works presented during the past twenty years. It is especially recommended for study in any of the elementary courses as taken in medical schools or hospitals; and should be employed as a supplementary volume for physicians' libraries.

It is regretted that the author did not include a detailed list of the 1920 revision of the Bureau of Census "manual of the international list of the causes of death."

For elementary use and general reference this seems to be the only serious omission of this excellent work. C. S. M.

THE PRINCIPLES AND PRACTICE OF PERIMETRY. By Dr. Luther C. Peter, A.M., M.D., F.A.C.S., Professor of Ophthalmology in Temple University Medical School, and in the Graduate School of the University of Pennsylvania. Second Edition. 281 pages, 161 engravings, and 5 colored plates. Philadelphia and New York: Lea & Febiger.

This second edition of the Principles and Practice of Perimetry by Dr. Luther C. Peter, will be appreciated and welcomed by both student and practitioner. The new arrangement of the text is more logical and practical than in the former edition. The first chapter is devoted to the anatomy and physiology of the visual pathways. Thorough study of this and the second chapter on the physiological principles and normal fields are necessary to a better and more complete understanding of the many variations from the normal field of vision and the underlying causes.

The following four chapters deal with the proper method of investigation, study and recording of perimetric observations, and include a very comprehensive résumé of the pathology, both general and special, of the various diseased conditions producing these field changes. Numerous illustrations of visual field charts are distributed through the text, graphically aiding the word pictures.

To appreciate the vast amount of work entailed in such a volume as this the reader is referred to the splendid bibliography Dr. Peter has consulted and listed in the appendix. Mention should be made of the excellent appearance of the volume. It reflects great credit on Dr. Peter and the publishers. G. H. C.

THE TONSILS, Faucial, Lingual and Pharyngeal, With Some Account of the Posterior and Lateral Pharyngeal Nodules. By Harry A. Barnes, M.D., Instructor in Laryngology, Harvard Medical School, etc. Second edition, illustrated. St. Louis: C. V. Mosby Co., 1923. Price $5.00.

All phases of the tonsil, with numerous illustrations, are described comprehensively and impartially. We find the histology not only of the tonsils but of all the lymphoid tissues of Waldeyer's ring. The chapter on the general pathology and bacteriology of the tonsils and their relations to systemic infection has been brought up-to-date. The newer operations, and the old, are described at length. There are a number of plates illustrating operative technic. The technic of local anesthesia has received special attention.

The author says the origin of the lymphocytes of the tonsil as well as of other lymphoid organs is a question upon which observers are not agreed. In the chapter on the function of the tonsils, although many theories are referred to, he points out that nothing definitely has been discovered unless it is the hemopoietic function, which is most active in all the lymphoid nodules of the body during the growing years of the child. Attention is called to the fact that regeneration after a well done tonsillectomy is an impossibility. "Cases of apparent regrowth are due either to the mounding of a hypertrophic lateral nodule of the lingual tonsil into the sinus tonsillaris, or to imperfect removal of the inferior or the superior pole of the tonsil."

Dr. Barnes does not mention the importance of keeping the nasal passages clear after adenectomy in order to guard against the recurrence of adenoids.

This book, with a good index, is up-to-date and furnishes valuable information on the tonsil. W. O. L.

THE MEDICAL CLINICS OF NORTH AMERICA. St. Louis Number. Vol. 7, No. 5, March, 1924. Philadelphia and London: W. B. Saunders Co.

This number of the Clinics contains articles on timely topics as follows: Pituitary Tumor, by Dr. Engelbach; Intracranial Hemorrhage in the Newborn, by Dr. Brady; Heart Disease in a Neurologic Clinic, by Dr. Schwab; Hysteria, by Dr. Barnes; Headache, by Dr. Tierney; Hypertension and Nephritis, by Dr. Kinsella; Nephritis in Children, by Dr. Marriott; Lobar

Pneumonia in Children, by Dr. Veeder; Mouth-and-Hand Synkinesia, Erythema Nodosum in an Infant, Recovery from Extreme Marasmus, by Dr. Zahorsky; Diphtheria, by Dr. Jeans; Influenza, by Dr. Wilson; Nondiabetic Glycosuria and Nonglycosuric Diabetes, by Dr. Taussig; Value of Weight-Curves in Determining the Severity of Diabetes, by Dr. Olmsted; Benign Pyloric Obstruction in the Aged, by Dr. Soper; Digitalis in the Different Types of Heart Disease, by Dr. Luten; Multiple Adenocarcinoma of the Brain, Multiple Emboli, Perforating Gastric Ulcer, by Dr. Lyter; Purpura, by Dr. McMahon; Mikulicz's Disease, by Dr. Hempelmann; Focal Infection in General, With Special Reference to the Prostate. A. A. E.

TEETH, DIET AND HEALTH. By Kurt H. Thoma, D.M.D., Assistant Professor of Oral Pathology, Harvard University Dental School. Illustrated. Copyright, 1923, by The Century Company, New York and London. Printed in U. S. A. Price $2.00.

This book is very valuable to the family physician, teachers, physical directors, parents and all others who have to do with instruction of human beings in relation to the care of the teeth and diet in order to prevent the development of a long train of evils that are directly traceable to poor teeth and faulty diet.

Dr. Thoma writes in very friendly vein, using aphorisms that are striking and that could well be used to put in print on the walls of schoolrooms or other public places. Dr. Thoma's conclusions are sound and reliable. The numerous illustrations are informing and will impress even a child who may have occasion to peruse the book.

The book should have a very wide sale. A. C. M.

CURES, by James J. Walsh, M.D. Published by D. Appleton & Company, New York and London.

The author has accomplished much good in pointing out the failures of alleged cures of various kinds.

Discussion is without radical tendency and shows a well appointed mind that approaches the discussion of the subject matter in a sane and careful manner; therefore the opinions of the author are worthy of reception by all seekers after truth.

The book should have a wide reading. A. C. M.

THE PRACTICAL MEDICINE SERIES, Volume I, General Medicine. Under the General Editorial Charge of Charles L. Mix, A.M., M.D. Series 1923. Chicago: The Year Book Publishers, 304 South Dearborn Street.

This compilation covers many subjects of timely interest. The protective power of serum of convalescent measles patients is discussed and indications point to this line of treatment as a probable valuable addition to the therapeutics of this disease.

The discussion of all tracts of the body from the medical standpoint receives generous attention and makes the book worth while reading. A. C. M.

THE UNADJUSTED GIRL. By William I. Thomas. Boston: Little, Brown and Company, 1923. This work appears as "Criminal Science Monograph No. 4," supplement to the Journal of the American Institute of Criminal Law and Criminology.

This book will be of interest to all interested in psychology, sociology, criminology and medicine. It analyzes the maladjustment of young human females, with reference to their sex problems, with care and without reserve.

Human wishes are found to have a great variety of concrete forms that are capable of the following general classification: (1) The desire for new experience; (2) The desire for security; (3) The desire for response; (4) The desire for recognition.

In the chapter upon "The Regulation of the Wishes" it is found that higher animals, and above all man, have the power of refusing to obey the stimulations whose reactions upon more lowly forms of life seem so invariable, because of the faculty of inhibition that results from stimuli received from inside. Behavior, therefore, seems to be self-determined, though upon investigation it is always found to be preceded by a stage of self examination and deliberation. But the result frequently involves a conflict between the conduct determined upon by this individual reaction, and the rules of conduct under which the society in which he moves is controlled. Every human action is defined, limited or modified by the existing code until from the most important dominated by the largest social influences, we descend to the most trivial dominated by the smallest unit, the family. Thus society, as a whole, determines the attitude toward homicide, the family, the minute details of when to wash the face, blow the nose, clean the nails, etc.

These are most important factors entering into the general ethical conduct of every individual, and commonly result in keeping him within the limits of a standardized moral and social behavior. Let there be any defect in their regulating activities, or the individual be recalcitrant to them, and conduct diverges along individual, unconventional, and so-called immoral lines.

Factors tending to disturb these potent but unrecognized influences, such as removal from country to town, leaving the home to work in factory, shop or office, especially when immediate favorable results do not obtain, may be followed by escape from restraint and convention and the beginning of a new and individualized career which the individual meets under new and less restrained conditions. This, again, is apt to be followed by a new set of reactions, less conventional and more immoral.

Girls subject to such influences, especially if originally possessed of the limited inhibiting powers that result from familiarity with vice in the home in which they grew up, with the freedom of action just explained, and subject to the wishes first examined and innate in every breast, soon become demoralized under the influences obtaining in that underworld upon whose outer fringes they first touch, frequently to be subsequently caught and held in its entangling meshes. These are bad company, for both male and female; narcotics, the dance hall and the house of prostitution.

Fortunately, however, social agencies have been and are endeavoring to offset these influences and save the girls from the first fall, and to reclaim those that have fallen. In the past these influences did a modicum of good because they worked without scientific understanding of the problem. To-day through psychological analysis of the problem greater good is to be hoped for.

Each of the principles established is supported by a number of interesting case histories that reveal a surprising and depressing state of social degredation imagined by few not engaged in social rescue work, and indicative of the magnitude of the problems of social rescue work. J. McF.

AMERICAN ILLUSTRATED MEDICAL DICTIONARY. New (12th) Edition, Revised and Enlarged. Edited by W. A. Newman Dorland, M.D. 1,296 pages with 338 illustrations, 141 in colors, containing over 3,000 new words. Philadelphia and London: W. B. Saunders Co., 1923. Flexible leather. $7.00 net; thumb index, $8.00 net.

The reviewer has been using this dictionary for some weeks, and has yet to want a word that is not to be found somewhere in this complete lexicon, which contains the terms used in medicine, surgery, dentistry, pharmacy, chemistry, veterinary science, nursing, biology and kindred branches.

Some of the new words included in this up-to-the-minute revision are: adipectomy, alexofixogen, anginosis. autoreinfusion. boopia. cryocautery, dysbolism, epinephrectomy, eubolism. euscope, friente, grammeter, hemolysinogen, histocyte, iletin, iodometry, ketonemia, lyotropic, meningioma, neuraxitis, oxydesis, pleuroscopy, pyotherapy, radiotoxemia, surgiology, tubectomy, urography, visuognosis, and xiphoiditis. Do you know what these words mean? Not only these, but many other words that have recently found their way into medical terminology are included in the Dorland Dictionary.

No up-to-date practitioner can afford to be without a means of identifying scientific terms with which he is not familiar. The sense of a whole article may be lost by the failure to keep a good dictionary in a convenient place on the desk, and the failure therefore to look up a few unfamiliar words.

Dorland's is a good dictionary, and we do not hesitate to recommend it. We should like to suggest, however, that greater care be taken in future editions to include plurals, especially irregular plurals, as these are sometimes puzzling and difficult to find. Also we should like to see a more frequent use of signs indicating pronunciation. After an exhaustive examination of the dictionary, these are the only suggestions we have to make for its improvement. M. S. B.

THE MEDICAL CLINICS OF NORTH AMERICA. January, 1924. University of Kansas Number. Vol. 7, No. 4. Philadelphia and London: W. B. Saunders Co.

This volume contains articles on a wide range of clinical topics. Of especial practical value is a group dealing with several aspects of syphilis, and contributed by Dr. R. L. Sutton, Dr. C. C. Dennie, Dr. W. K. Trimble and Dr. P. F. Stookey. Dr. R. H. Major discusses empyema, xanthoma diabeticorum and hyperthyroidism; Dr. P. T. Bohan, ligneous thyroiditis and hemiplegia; Dr. L. S. Milne, Hodgkin's disease; Dr. R. L. Haden, anemia and focal infection; Dr. G. H. Hoxie, hyperthyroidism; Dr. D. R. Black, diabetes; Dr. L. Clendenning, intestinal invalids and subphrenic infection; Dr. H. C. Berger, purpura hemorrhagica and Hirschsprung's disease; Dr. F. C. Neff, premature twins and triplets; Dr. D. Walthall, tetanus; Dr. H. L. Dwywer, dextrocardia, corpora striata lesion, and developmental defects of the skull; Dr. W. W. Duke and Dr. D. D. Stofer, allergy; Dr. R. C. Davis, measles and lobar pneumonia; Dr. W. A. Myers, botulism; Dr. F. J. McEwen, balantidium colitis; Dr. E. T. Gibson, tetany and neurosyphilis; Dr. A. L. Skoog, epilepsy and multiple neuritis; Dr. H. R. Wahl, carcinoma of the biliary tract and Addison's disease. A. A. E.

DISEASES OF THE SKIN, by Richard L. Sutton, M.D., LL.D., Professor of Diseases of the Skin, University of Kansas School of Medicine. Fifth Edition, Revised and Enlarged. St. Louis: C. V. Mosby Co. Price $10.00.

The author starts out with the anatomy of the skin and pleasantly conducts the reader through the different divisions, density and uses, and explains its lymphatics, nerves, pigment and blood vessels. He interestingly conducts the reader into the fruitful fields of its physiology, where he teaches that the skin is not only a covering of the body but serves many useful functions, as ventilator, heat regulator and a safeguard against many foes. But foes have come and will continue to come, and for this reason the author has been inspired through long years of study, observation and research to prepare a work so valuable, so clear and helpful to the busy physician.

The physician is sometimes called to see a patient whose skin is like a fiery flame and the question is "What could cause such an attack?" Please turn to the article on anaphylaxis and a few questions will bring from your patient the fact that she has eaten something that her skin cannot tolerate, for many and varied are the influences of food on the skin, so nicely expressed by the author. Then a few pages more and he brings you into the primary and secondary lesions, and the choice locations of the various lesions.

The reader becomes so interested in this work that he turns to the article on diagnosis where the writer has made it so plain that were the student even an idiot he should not err therein.

The article on treatment, both internal and external, is most excellent and interesting; excellent because it is the result of close observation, study and research; interesting because it is short, nicely arranged and right to the point. The classification of the various forms of skin diseases is clear and easily followed.

The different skin lesions are studied under their own heading, with many illustrations and colored plates, with their etiology, symptoms, diagnosis, prognosis and treatment and presented in such a clear manner that it is convenient for the busy physician and easily understood by the student. Let me say that every man engaged in the healing art should have this book in his library, not for its beauty but for its value as an aid to the reader who may desire to become a skin specialist or to the general practitioner who may have difficult and puzzling diagnoses to make. J. B. F. W.

FEEDING, DIET AND THE GENERAL CARE OF CHILDREN. A Book for Mothers and Trained Nurses by Albert J. Bell, A.B., M.D., Assistant Professor of Pediatrics in the Medical Department of the University of Cincinnati, etc. Illustrated. Philadelphia: F. A. Davis Company, 1923. Price $2.00 net.

This book, written for nurses and mothers, would be an excellent primer for general practitioners having babies under their care. The work on infant feeding—both breast and artificial—is very good indeed and the advice contained therein is sound. The author is inclined to be somewhat liberal in his diet lists for children after the first year. Pickles, olives, radishes and nuts will do more harm than good to the digestive tracts of children between the ages of five and ten years. The suggestions made for the household remedies to be used in the treatment of common minor ailments of the young are concisely and clearly stated. The chapters on signs of development and dentistry are particularly valuable and timely. Toward the end of the book there is found a table of food values which is more useful for adults but can be applied very nicely to the diets of older children by judicious substitution. The book contains many useful suggestions and can be safely recommended to mothers, nurses and, as stated before, to quite a few physicians. R. K. R.

CHEMISTRY FOR NURSES. By Fredus N. Peters, A.M., Ph.D., formerly Professor of Chemistry and Director of Laboratories, Kansas City College of Pharmacy; Professor of Organic Chemistry, Hahnemann Medical College; Director of Laboratories and Professor of Chemistry and Metallurgy, Kansas City Dental College; Instructor in Chemistry in Kansas City Central High School for 23 years; more recently Vice-Principal. 302 pages. Second Edition. Published by The C. V. Mosby Company, St. Louis. Price $2.50.

The author tells the story of chemistry and gives its bedside application in an easily readable manner so that the subject matter can be appreciated by those who have had only an elementary course. At the end of each chapter "Exercises for Review" in the form of questions afford a practical test of the student's understanding of the work.

The book meets the purpose for which it is intended. A. C. M.

INTERNATIONAL CLINICS. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene, and Other Topics of Interest to Students and Practitioners by Leading Members of the Medical Profession Throughout the World. Edited by Henry W. Cattell, A.M., M.D., Philadelphia, U. S. A. Volume IV. Thirty-third Series, 1923. 308 pages. Philadelphia and London: J. B. Lippincott Company, 1923.

This volume is unusually interesting. The leading article on "The Morbid Anatomy of Gastric and Duodenal Ulcer" by Stewart of London, covers twenty-three pages with good illustrations of gross pathology.

An article by Danon of Geneva, on "Remarks on Epigastric Hernia" fits in well with the previous article.

Major S. A. White, U. S. Army, has a good article on "Acidosis."

W. S. Thayer's paper "On Fever in Tertiary Syphilis" is practical, as this clinical symptom is frequently misinterpreted. The temperature charts recorded are very illustrative.

Dr. T. Turner Thomas has a well illustrated article on "Treatment of Fractures of the Lower End of the Radius."

The monograph on "A Treatise on Echinococcus Disease," by E. B. Keller, Kansas City, which comprises the complete text of the "Alvarrenga Prize Essay" on the College of Physicians of Philadelphia is well written and carries a good bibliography. A. C. M.

DISEASES OF THE SKIN. By Frank Crozer Knowles, M.D., Professor of Dermatology, Jefferson Medical College; Lieutenant-Colonel Medical Reserve Corps, U. S. A.; Dermatologist to the Philadelphia General, the Presbyterian, the Childrens' and the Babies' Hospitals; Chief-of-Clinic, Dermatological Department, Pennsylvania Hospital; Member of the American Dermatological Association; Fellow of the College of Physicians, etc. Second edition, thoroughly revised, with 229 illustrations and 14 plates. Philadelphia and New York: Lea & Febiger.

The second edition of this work embraces certain features which add materially to its value as a working book for the general practitioner. The several pages devoted to the regional distribution of the more common types of skin diseases, presented in a somewhat tabulated form, afford an opportunity for a more easy diagnosis. This, with the regular and special methods of treatment enumerated, make the opening chapters of considerable interest.

The work is splendidly written. The illustrations, of which there are over two hundred, are very well selected and are unusually good. The classification of diseases is similar to that followed by writers in general. The differentiation in diagnostic points is definitely carried out and is very concise and should assist materially in arriving at a correct diagnosis. This new work by Dr. Knowles is a splendid contribution to the literature on diseases of the skin. I. G. S.

PHYSICAL DIAGNOSIS. By W. D. Rose, M.D. Third 5dition. C. V. Mosby Company, St. Louis, 1922.

In the third edition of Dr. Rose's most excellent work on Physical Diagnosis, much has been rewritten and added that increases the value of this book to students and practitioners. The section dealing with the physical examination of the circulatory system has been entirely rewritten and additional material incorporated to cover recent advances in the subject. Similarly the chapter dealing with blood pressure has been rewritten and pyelography has been treated with greater detail. Dr. Drew Luten, Instructor in Clinical Medicine, Washington University School of Medicine, has contributed a most valuable chapter dealing with electrocardiography and the diagnosis of the cardiac arrhythmias. This chapter covers this topic in a clear, yet scientific manner, and is especially worthy of careful study by the practitioner who may not have had the opportunity to become familiar with the recent advances in cardiology. Minor changes have been made throughout the entire text of the book, bringing it up-to-date.

The complete volume is a clear, scientific treatise in this most important subject. The physical examination of the patient is the most necessary procedure the physician uses in arriving at a diagnosis. The medical student cannot devote too much time to this study; and the practitioner, no matter how busy, should always keep up-to-date on this subject. Dr. Rose's book meets the need of both medical students and practitioners. R. R. S.

MANAGEMENT OF THE SICK INFANT. By Langly Porter, B.S., M.D., M.R.C.S., England. Professor of Pediatrics, University of California Medical School; and William E. Carter, M.D., Assistant in Pediatrics and Chief of Outpatient Department, University of California Medical School. Second revised edition, illustrated. C. V. Mosby Co., St. Louis. Price $10.00.

The second edition of this book by the two authors, whose work has been the study, the care and the treatment of sick babies, is a wonderful revelation and fills a long-felt want of the general practitioner as well as of the specialist whose work calls him into the chambers of sick babies. The infant comes into the world the most helpless of all creatures, and "As the twig is bent the tree is inclined," so it is with the helpless little infant. If the mother and the medical attendant are prepared to give the little innocent creature the right start on its journey through life, much will have been done to fortify against the baby falling sick.

In the first chapter, the authors take up the general consideration, the peculiar functions, the helplessness, the undeveloped state of the nervous system and the thermal apparatus in a pleasing and helpful manner and teach the importance of care and prophylaxis.

The chapter on vomiting with its many causes and peculiar vomitus, with the care, management and treatment are all clearly and definitely set forth. This chapter is followed by one on diarrhea, possibly the most prevalent and least understood of the ills of the baby, but this subject is so clearly outlined by the authors that it is easy for the medical attendant to direct the nurse to carry out the plan so well laid down for her in the care of the sick baby.

The next chapter is one on constipation, and here the authors emphatically caution against the use of drugs for the young sick infant, for harm may and will come as a result of too much or too strong medication.

After the study of the chapters above mentioned, the authors invite your attention to the chapter on nutrition, which with the preceding chapters make up the four cardinal or fundamental characteristics of infant life, and if the reader will carefully study these four gospels and apply the teaching to the treatment of the sick infant by assisting nature, the crying, fretful, suffering little mortal will become a happy, smiling, robust infant. We are now in the days of preventive medicine and if the prophylactic instructions of the authors are observed many of the maladies of infant life will be corrected and some will be banished from the earth.

The chapter on hemorrhage is thorough and instructive and when the occasion occurs, the one who has studied this chapter will be ready for any call. The next step takes us into the field of pain and tenderness of the infant. These two conditions may be inborn or acquired and are clearly set forth in very readable etiology, diagnosis and treatment.

Following this is the chapter on convulsions, "one of the most alarming symptoms encountered in childhood. From the moment of birth to the end of the second year such attacks are not unusual. The presence of a convulsion is always distressing, not only to the parents but to the attending physician as well." The many causes that bring about this horrible storm in infant life are generously expressed by the authors. Many of the diseases of infant life are ushered in by convulsions. Many times the physician gets a hurry call, the infant has convulsions, and before the doctor arrives the infant may be through the ordeal and be at play, bearing out the authors that many of these convulsions are self-limited. Teaching as they do that medication often has but little effect, the family of the infant, however, expects something to be done and the physician advises the various steps in the treatment and the child soon recovers and the physician is the best man in the world.

Follow me now into the next chapter on fever, a short but interesting chapter, presenting in pleasing terms the causes, management and treatment.

We will now follow the authors into Part Two of this valuable work, where we take up the individual diseases, beginning with those of the respiratory tract. Here we find a library in itself, an encyclopedia, if you please, containing the results of their own research and investigation as well as the observations and study of others who have devoted themselves to this field of medicine, leading the reader step by step from the common coryza to the deeper-seated conditions.

With a good outline of diagnosis, the various forms of treatment and management are nicely arranged under each heading, which is a great saving of time to the busy physician who wishes to consult the authors. By turning to the index he is referred to a certain page and there under that heading he will find just the item he wishes without reading page after page and then not finding much help, as is the manner of some books.

The next turn of pages brings us into the most wonderful laboratory ever constructed, namely, the digestive tract, and the authors here give us a clear conception of their research and observation, also what they have gathered from their colleagues, by outlining for us the best method in dealing with the sick infant.

From this field of study they give us a pleasant outing in the field of the circulation of the blood, giving us a good conception of the heart with its peculiar defects, both acquired and congenital, outlining the best mode of treatment and management. Other chapters take up the study of the contagious and infectious diseases with a nice touch on hereditary trouble, and to the beginner in the field of infant care the third part of the book may be most useful, for this part is a postgraduate course in itself, with its clear descriptions, its fine illustrations and methods of management. The work is valuable for what it brings; it is helpful for what it teaches and a time-saver for its concise arrangement and helpful suggestions. J. B. F. Wyant.

MEDICAL AND VETERINARY ENTOMOLOGY. A textbook for use in schools and colleges, as well as a handbook for the use of physicians, veterinarians and public health officials. By William B. Herms, Professor of Parasitology in the University of California, etc. Second edition, completely revised. Octavo, 462 pages, with 229 illustrations. New York: The Macmillan Company, 1923. Price $5.50.

This work is exceedingly well adapted to the close study of the more important insects and arachnoids that affect the health and comfort of man and beast. The anatomy of each one is carefully detailed, and elucidated by clear illustrations. The habitat, life history, distribution, method by which infection or irritation is conveyed to host, relative to the insect considered, is entertainingly treated. Control by preventive means, preferably, and temporarily, by repellants and exterminators is admirably featured, house fly control and mosquito control each occupying a complete chapter, to which these important enemies of man are well entitled. The chapters devoted to the house fly justify every sanitarian, public health officer and physician in securing a copy of this book, as few realize fully that this insect is the greatest enemy of the human race as a carrier and depositor of pathogenic organisms, and the touching sentimentalism of Sterne, in Tristram Shandy, where Uncle Toby is merciful to the captive fly, stating that there is room in this world for both fly and himself, is quickly disillusioned, when one considers that a pair of flies commencing operations in April, "may be progenitors, if all were to live, of 191 quintillions in August, capable of covering the earth 47 feet deep, and that 'the average fly carries one and one-fourth million bacteria.'"

The work is replete with not only the most important and most recent investigations, many of which were by the author himself, but also contains many devices, accompanied by illustrations and plans, for the control and treatment of poultry and cattle. The author is notably practical in his conclusions and recommendations, accepting no theory nor process that has not passed the tests of reasonable investigation or experience. The summation of his views on fly control well illustrates his attitude; urging that "swatting the manure pile" is of far more effect sanitarily than merely "swatting the fly."

In the introduction is given a concise history of medical entomology, a science mainly developed within the last fifty years. The house fly, stable tsetse and other flies, mosquito, cockroach, beetle, lice, fleas, louse flies, cone-noses, bedbugs, bees, ants, wasps, spiders, scorpions, mites and ticks comprise the greater part of the work. There is a sole chapter on myiasis, and the larvæ or maggots concerned therein. It is quite unnecessary to urge the high value of the concise, well written chapters on insect anatomy, insect mouth parts, and how insects cause and carry disease.

There is an index of authors as well as of subjects. The book fills a void in medicine. One may smile sardonically at the physicians of Rome who could not prevent the vacation of Sylla's dictatorship by lice, but is the average physician of the present taking full advantage of his opportunity and equipping himself with the important facts of medical entomology? Are the public health bureau heads and their subordinates basing their activities often on meager and incomplete knowledge desultorily acquired? Is the student trying to progress with the necessarily limited amount of entomology contained in works of general character? To all these is this book strongly recommended. Its importance to the veterinarian cannot be exaggerated.

H. P. Ashe.

OPERATIVE SURGERY. Covering the operative technic involved in the operations of general and special surgery. By Warren Stone Bickham, M.D., F.A.C.S., former surgeon in charge of general surgery, Manhattan State Hospital, New York, former visiting surgeon to Charity and to Touro Hospitals, New Orleans. In six octavo volumes, totaling approximately 5,400 pages, with 6,378 illustrations, mostly original, and separate Desk Index volume. Philadelphia and London: W. B. Saunders Company, 1924. Cloth, $10.00 per volume. Sold by subscription only. Index volume free.

The set of Operative Surgery by Bickham, which will consist of six volumes, three of which are already off the press, will probably be the most comprehensive work of its kind that has been published.

Volume I discusses preoperative preparation in detail, also anesthesia, describing all methods which are used, and also all types of anesthetics. The subject of analgesia is covered very completely. Special emphasis is laid upon the conduct of operation and after-treatment of the patient. The chapters on skin grafting, dermaplastics, transplantations, amputations, and dislocations are all beautifully illustrated, and described in detail by the leading authorities on these subjects.

Volume II, on arteries, veins and lymphatics, describes the various types of conditions found, with illustrations and methods of operations covering each one. The many operations on muscles, tendons, ligaments, nerves, bones and joints are presented in a concise manner.

In Volume III, the chapters on the eye, ear, nose and sinuses are complete, as are the chapters on the palate, tongue, pharynx, larynx, trachea and esophagus. The surgery on the thyroid, thymus, and neck demonstrates the care which has been taken in the preparation of this volume. Great advancement has been made during the past few years in the operative treatment of surgical conditions of the thorax, pleura, lungs, mediastinum and breast. The ease with which the technique for these operations can be followed is worthy of note.

The author is to be congratulated on these extremely well prepared volumes. Donald Guthrie.

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ORIGINAL ARTICLES

SYMPOSIUM ON PELVIC SURGERY
(Concluded)

SURGICAL TREATMENT OF COMPLETE UTERINE PROLAPSE*

BARTON COOKE HIRST, M.D.
PHILADELPHIA, PA.

Among the problems yet to be solved in gynecological surgery is the best operative treatment for complete prolapse of the uterus. Anyone visiting a number of representative clinics must be struck by the extraordinary diversity in the operative measures for prolapsus. There are the Mayo operation—the supra vaginal amputation of the corpus uteri and the interposition of the broad ligaments; Dr. Goff's operation of total hysterectomy with suture of the bladder to the stumps of the broad ligament; Dr. Bissell's hysterectomy with his flap sliding operation on the anterior wall; Dr. Cullen's operation removing the upper portion of the vagina with the very high amputation of the uterus and the restoration of the pelvic floor; the well-known interposition operation of Dr. Watkins; vaginal hysterectomies combined with all sorts of plastic operations, and the older procedures of fixing the uterus to the abdominal wall or even burying it half in the abdominal wall. In witnessing these operations during visits to different clinics during the past twelve or fifteen years, it has seemed to me that certain fundamental principles are usually overlooked, without attention to which it would be impossible to devise an operation which was theoretically correct and which could be counted on to give the best clinical results.

It will be admitted, I think, that there are three requisites for a clear comprehension of this subject: first, a thorough knowledge of the anatomy of the region; second, as a vast majority of these cases are due to injuries in labor, an exact knowledge of just what happened to the genital tract when it suffered injury in parturition; and third, a clear conception of how each individual anatomical structure could be restored to its original condition. Other facts should also be kept in mind which apparently are often overlooked: namely, that prolapsus uteri can occur independently of rectocele or cystocele; that there can be a cystocele without prolapse and without rectocele, and that there may be a rectocele without prolapse or cystocele; but as the injury of labor which causes the prolapse, is as a rule so extensive, these three factors are most frequently combined in each case, so that an operator, it seems, often thinks that in dealing with cystocele and rectocele he is remedying at the same time the prolapse, whereas the last named is an entity in itself with its own distinct causes, to be dealt with in a manner entirely independent of the other two conditions which so often accompany it.

The two essential factors in prolapse of the uterus are an injury to, or overstretching of, the cardinal ligaments in the bases of the broad ligaments and a similar traumatism to the utero-sacral ligaments. Without these injuries a prolapsus uteri is impossible. Injuries of the lower birth canal do not cause prolapse of the uterus directly, although indirectly they may contribute to it and they are, as already stated, very often associated with it, but their correction will not cure the prolapsus. The same may be said for fixation of the corpus uteri which may be attached firmly to the abdominal wall, even buried in it, or fixed in a position of antiversion by the interposition operation. Nevertheless the cervix may in time protrude from the vulva by descent of the lower uterine segment, so that from the patient's point of view her condition is the same as before the operation. In short, there is but one logical cure for prolapsus uteri; namely, the correction of the defect in the two sets of ligaments, which, if intact, will surely prevent prolapsus and if injured, will just so surely permit it to occur.

There are, then, three factors to be taken into account in every operation for prolapse of the uterus: the correction of the defect in the two sets of ligaments which support the uterus in its

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* Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 3, 1923.

proper position, and incidentally, as there is so often an associated rectocele and cystocele, the proper operative procedures for each of these defects separately. Moreover, the retroversion of the uterus, so often found in connection with partial or complete prolapse must also receive individual attention. If, therefore, these premises are admitted to be correct, the operative treatment of prolapse of the uterus consists in the successful restoration of the integrity of the cardinal and the uterosacral ligaments, but particularly the former, which constitute the firmest support for the uterus at its normal level. To expose these ligaments it is usually most convenient to amputate the cervix, but not absolutely necessary to do so. Having removed the vaginal portion of the cervix, by a blunt dissection upward, the bases of the broad ligament are easily exposed, and then the cardinal ligament is reattached to the lower uterine segment by a modification of the Alexandrof principle, restoring the support to this portion of the uterus, which is the essential factor in keeping it at its proper level in the pelvis. This is assisted, however, by shortening also of the uterosacral ligaments, which must have been enlongated or transversely lacerated in order to allow the lower uterine segment and cervix to drop much below its natural level.

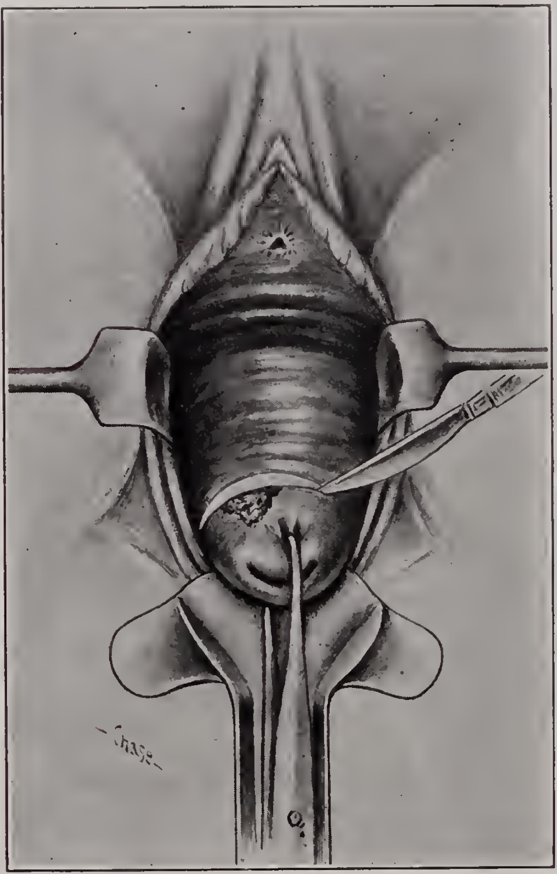

Figure 1. Initial incision for exposing the supporting ligaments of the uterus.

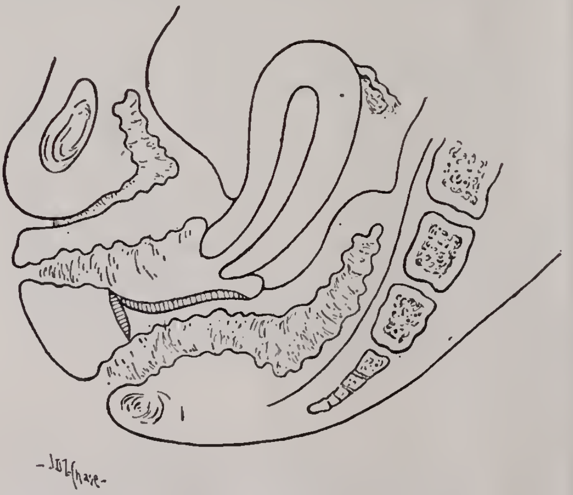

Figure 2. Diagrammatic sketch showing junction of rectovaginal septum and triangular ligament.

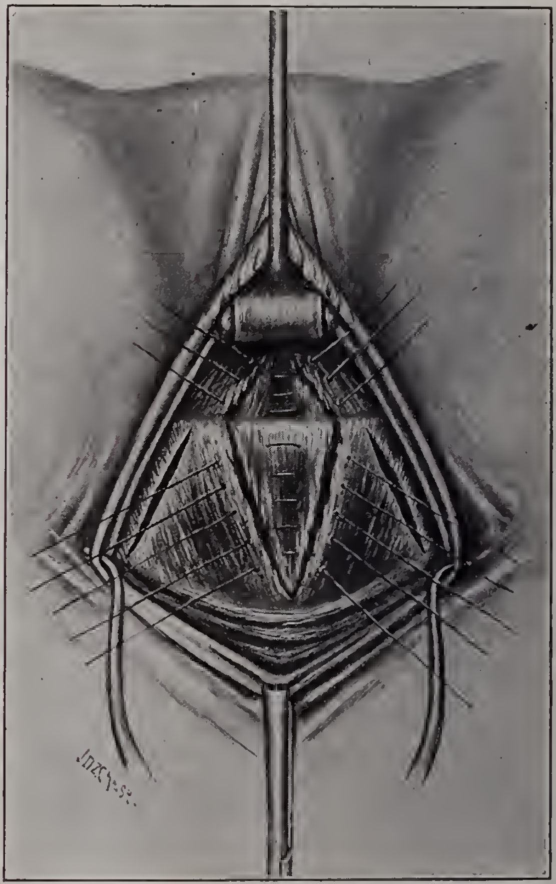

Figure 3. Showing the tear in the rectovaginal fascia meeting that in the triangular ligament at right angles.

These ligaments can be reached in one of two ways: either through the posterior vaginal vault, or by extracting the corpus uteri from the peritoneal cavity through the anterior vaginal vault and then by strong traction downward and backward exposing the ligaments. After their exposure I find the most convenient way of shortening them and reinforcing their support to the posterior portion of the lower uterine segment and what remains of the cervix, is to cross them on one another and to attach them to the portion of the lower uterine segment opposite that to which they belong. The accompanying illustrations exhibit both methods of reaching these ligaments, which, when exposed, are dealt with in the manner just mentioned. But unless the operator repairs the injuries of the anterior vaginal wall, the support to the bladder and the damage to the posterior wall and pelvic floor, his operation, from the patient's point of view, is regarded as a failure because the cystocele and rectocele give her discomfort which she can hardly distinguish from her original complaint. In this portion of the work it is most essential to have the clearest possible idea of exactly what happens to a woman when she is injured in labor, and on this point it would seem that the average operator is not as clearly informed as one might expect.

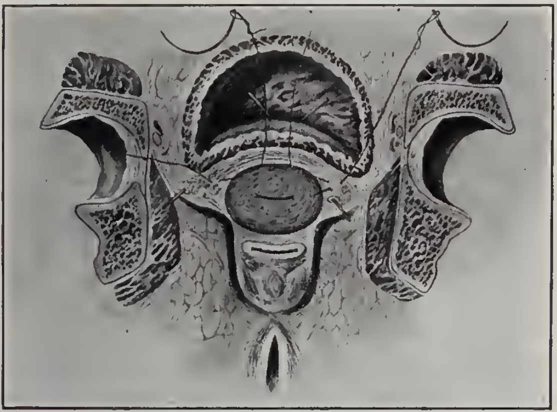

Figure 4. Stitches inserted in cardinal ligaments of the uterus to bring them in front of the cervix after the Alexandroff method.

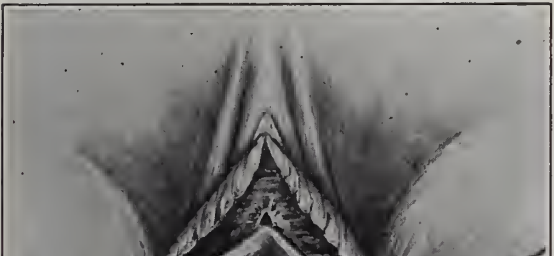

Figure 5. Uterosacral ligaments exposed by extreme anteversion of the uterus, and sutures inserted to shorten them.

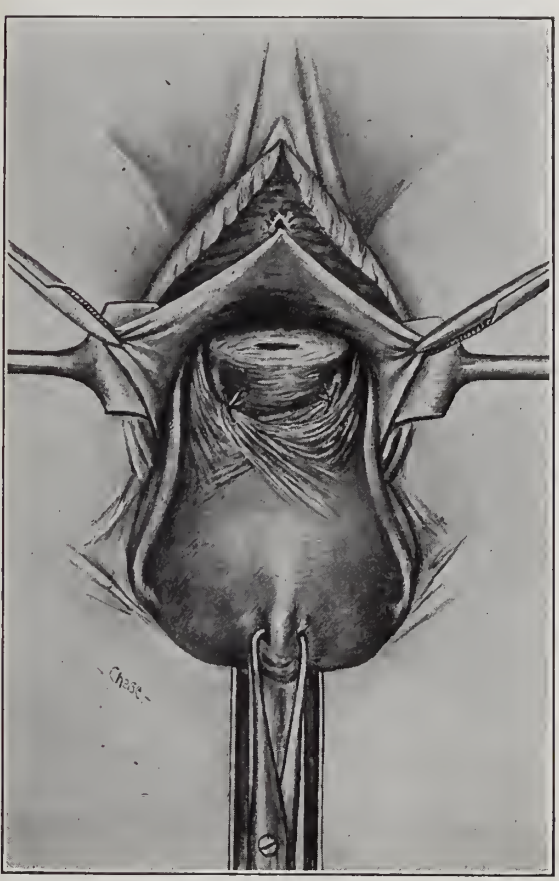

Figure 6. Uterosacral ligaments exposed by extreme anteversion of the uterus, crossed on one another and secured by sutures.

In the anterior vaginal wall the following damage may be sustained in labor: diastasis of the fascial plate between the bladder and the vagina, through the gap in the middle of which the bladder emerges; lacerations of the compressor urethra muscle between the two layers of the triangular ligament in the anterior vaginal sulci; and possibly an elongation or transverse laceration of the uterovesical ligament. If the supports of the uterus are also damaged, the descent of the lower uterine segment drags with it the bladder by means of the uterovesical ligament, but the correction of this fault will not necessarily cure the cystocele.

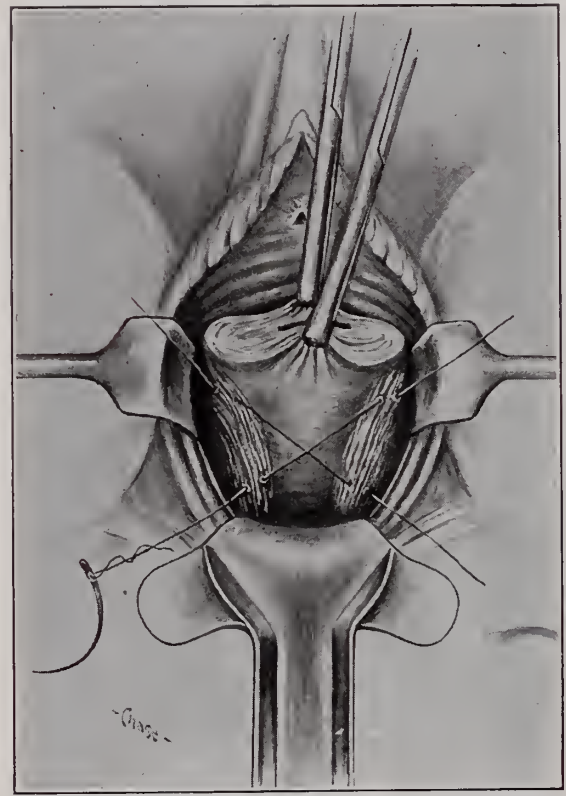

Figure 7. Exposure and suture of uterosacral ligaments by extreme retroversion of the uterus through posterior vaginal vault.

In the posterior wall and pelvic floor the following injuries may be sustained: Laceration of the levator ani muscles, beginning at the descending ramus of the pubis and running downward and inward to the middle line; lacerations of the rectovaginal fascia; lacerations of both layers of the triangular ligament; lacerations, in the median line, of the deep transversus perinei between the two layers of the triangular ligament; lacerations of Colles' fascia and the perineal center, and possibly injury of the superficial perineal muscles between the inferior layer of the triangular ligament and Colles' fascia, namely, the superficial transversus, the bulbocavernosus and even the sphincter. Each one of these anatomical structures must be considered separately in an operation for pelvic repair and it should be the ideal of the operator to restore each one of them to the condition in which it was before labor. In the anterior vaginal wall this is best accomplished in a woman of child-bearing age, in my experience, by the fascial flap sliding method of Dr. Bissell, combined with an operation of my own for the restoration of the compressor urethrae muscle; but if the woman is past the child-bearing age the easiest and quickest procedure for the correction of the cystocele, is the well-known interposition operation, which, at the same time, corrects the tendency to retrodisplacement so commonly found in connection with prolapse. In the woman of child-bearing age this last defect is best dealt with by shortening the round ligaments. The mistake most commonly made in regard to the interposition operation is to count on it to cure the prolapsus because it fixes the corpus uteri in a position where it will not descend; but unless attention is paid to the supporting ligaments of the lower uterine segment, already referred to several times, the cervix uteri may eventually protrude from the vulva even though the corpus uteri is firmly fixed to the anterior vaginal wall by a well performed interposition operation.

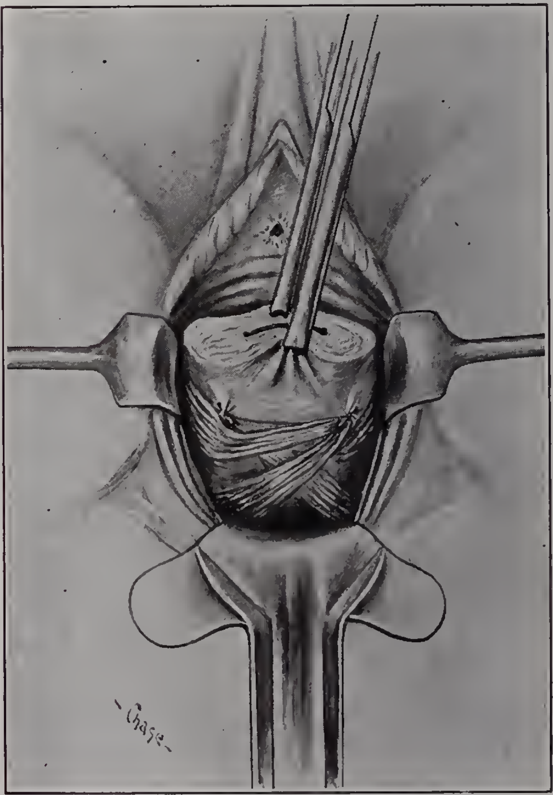

Figure 8. Uterosacral ligaments sutured, with uterus temporarily retroverted and posterior vaginal vault opened but not necessarily into the peritoneal cavity.

The posterior vaginal wall and pelvic floor can be best restored to an absolutely normal condition. I think, by an operative technique that I have been employing for some twelve or fourteen years, which lays bare each anatomical structure that was damaged in labor so that it can be plainly seen and which enables one to restore each one of these exposed anatomical parts to its original condition. If the injury is a very extensive one, as it is apt to be in a case of prolapse, a factor I overlooked for some time, must be carefully taken into account, or the result will not be satisfactory to the patient or the operator. This is the damage to the rectovaginal fascia, which is split in the midline so that a wide gap ensues through which the upper portion of the rectum protrudes as the lower portion protrudes through the rent in the triangular ligament. In repairing this injury, to which Dr. Watkins of Chicago calls attention, the fact is usually forgotten that the tear in the rectovaginal fascia is at right angles to the tear through the triangular ligament. This is well shown in the diagrammatic picture herewith exhibited. Even Dr. Watkins, to whom we owe so much in plastic surgery, does not, I think, make this point perfectly clear and, as may be seen in the illustration, unless the stitches are inserted with this fact in mind, the restoration of the pelvic fascia to keep the rectum in its proper position is not complete. For example, if the stitches in the rectovaginal fascia are carried down in the same line in which they are begun, they will flatten out the triangular ligament and the perineal body and will not properly unite these two structures; whereas, on the other hand, if the sutures in the upper vagina are inserted in the same direction as they should be put in for the injury to the triangular ligament, the rectovaginal fascia is not completely restored in its whole length.

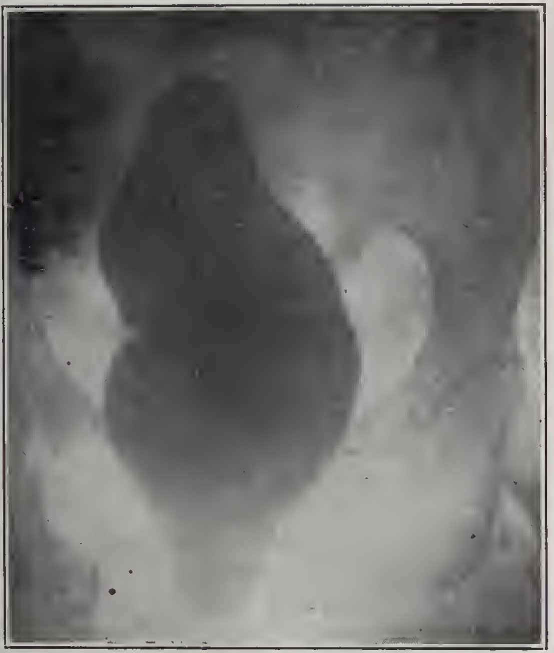

Figure 9. Enormous dilatation of the rectum—a case of old rectocele. The upper fold of bowel is a prolapsed sigmoid.

Another factor remains to be considered: What is to be done with the redundant rectal wall which is the result of a long existent rectocele? Should it be dealt with as Dr. Ward does in New York, by putting a suture through it, then pulling the anterior rectal wall up by making this suture emerge through the posterior vaginal wall at a higher level; or is it better to do what Dr. Noble of Georgia suggests, to make the rectocele protrude through the anus by pressure on the posterior vaginal wall and then to amputate the protruding portion?

The huge dilatation of the rectum accompanying rectocele obviously should be corrected in some manner, but it does not seem to me that either the proposition of Dr. Ward or of Dr. Noble accomplishes the desired result. As may be seen in the x-ray photograph herewith exhibited, the dilatation of the rectum involves its whole periphery, and therefore attention to the anterior wall alone would not suffice. I believe that a proper restoration of the rectovaginal fascia and of the triangular ligament, by keeping the rectum in its proper position and preventing its undue distention, will result finally in a restoration of contractile power and a diminution in the abnormal capacity of the bowel. It might perhaps be necessary to use electrical stimulation for some time after the operation to accomplish this result. I am having a series of x-ray pictures taken of patients operated upon by the technique just described that I hope will show that the desired results can be accomplished in this manner, but unfortunately these pictures are not yet completed. I shall, however, publish them in the near future, with others showing the result of electrical stimulation of the muscular coat of the rectum, and I hope to be able to demonstrate that no operative procedure on the rectum itself is necessary if an appropriate plastic operation is performed upon the vagina, and if chronic constipation is prevented, in these cases of very extensive rectocele.

Finally, we must keep in mind Dr. Ward's valuable suggestion to diminish an excessive depth of Douglas' pouch by excising the peritoneal sac into which the intestines may drop, causing a bulge due not to a rectocele but to an enterocele. This is not often required but it should receive attention when necessary.

RELATIVE VALUES OF IRRADIATION AND RADICAL HYSTERECTOMY FOR CANCER OF THE CERVIX*

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Surgical statistics the world over demonstrate the fact that there is scarcely no anatomic situation which offers a more discouraging outlook for operative intervention than cancer of the cervix. It is not, therefore, surprising that many excellent surgeons have largely sidetracked the radical abdominal operation in favor of irradiation, since the low percentage of operability and the high rate of mortality has not proved a very alluring field for such a strenuous endeavor. In our own hands, in the Gynecologic Department of the University Hospital, notwithstanding the most assiduous endeavor, we were never able to achieve a salvage of more than thirty-three per cent of five-year cures, in a relatively small number of operable cases, which had been culled from a much larger group of hopeless cases. Several reports from other sources have demonstrated a higher percentage of curability, while some have dropped below this point. It was not difficult, therefore, to swap horses when the surgical race had been so poorly run by the first nag, when the second offered a hope for at least as good if not a better issue.

In our initial employment of radium, we proceeded with great caution, only applying it in hopelessly inoperable cases, but when this agent began to yield such startling palliative results, we widened its scope of administration to the zone of borderline cases, acting on the principle that irradiation, which is accompanied with scarcely no mortality, would work quite as effectively as a hazardous operation with its large percentage of rapid recurrences and infrequent cures. Again, after advancing our standard, the results did not cast discredit upon this innovation, and for the last three years the choice of a radical operation has been limited to the absolutely favorable type, and they have been so few in comparison with the number of hopeless and borderline cases as to be almost negligible. It has been our endeavor to maintain as judicial an equilibrium as possible, not too hastily abandoning the old and not too unreservedly taking on this newer therapeutic method. After all, as our experience has taught and statistical reviews fully confirm, there is no accurate or scientific method of determining the exact extent of any cancerous process, for not only does operability vary remarkably among surgeons of the highest merit, but even in one's individual experience, this instability is noted. What we might define as a borderline case at one time may be classed as inoperable at another.

There really is but one way of estimating cures in cancer, and that is upon actual basis of gross numbers. The question is, how many cases of cancer have you seen, and how many have you cured? Were the physician to attempt to define what is a curable, a borderline, or an incurable case of pneumonia, typhoid fever, or any of the numerous diseases which he encounters, he would hopelessly muddle statistics, and we are persuaded after a perusal of many articles on cancer, based upon this differential standpoint, that the results are as glaringly chaotic. To put this matter in a nut shell, all cases of cancer recorded in our clinics should be included as a whole and not subdivided into classifications so subject to the large factor of human mutability. How better may one confirm this observation than by pointing to the accompanying compilation of the surgical results of ten skillful specialists. Thus Peterson in 380 cases considered only 15.7% as operable, whereas Graves in a series of 189 cases, operated upon 65%. If such a wide difference occurs in the hands of two men of special skill, what may one expect from the surgical world at large? As we view this situation, we consider such an attempt to define surgical limits as practically useless. As an example of exaggerated caution, a writer has recently defined the curable case of cancer of the cervix as one which can only be recognized miscroscopically. This refinement of course would essentially reduce operability to a vanishing point, and is the view of a surgical pessimist. The point which we wish to make is that mass statistics rather than differential values are in the final run the only safe basis upon which to rest our estimate of curability. Furthermore, the surgical mortality following the radical operation is of even wider variability, for in the accompanying table, the lowest mortality recorded is five per cent, whereas the highest is 26.6 per cent. Also, what one surgeon designates as a radical abdominal operation, when compared with the extensive dissection of another surgeon, might quite properly be classified as a simple panhysterectomy. And so goes the fallacy of statistics which are built upon such shifting sands.

The object of our paper is to compare surgical and irradiation statistics viewed from the standpoint of cures, and the mortality attributable to therapeutic intervention. In Table II, the most recent results of radical operations from ten excellent clinics are epitomized, and a mere glance at these columns sets forth the ever intrusive human equation. Thus Martzloff's report from the Gynecologic Clinic of the Johns Hopkins Hospital shows a 14.2 per cent mortality and only a 26.6 per cent salvage—a poor exhibit in comparison with many other reports. Knowing the method followed in compiling these statistics, we are confident, however, that none can be more strictly fair or more accurate. For instance, there has been a change of viewpoint in recent years among pathologists as to what constitutes malignancy in certain questionable changes. Taking into account this fact, Martzloff first reviewed the original microscopic slides of all cases diagnosed as cancer in the gynecological laboratory, and chose only those cases which were unqualifiedly malignant, discarding all questionable cases and throwing out others which a decade ago were designated as malignant, but which are today otherwise classified. Upon this scientific diagnostic basis his clinical structure was erected. Just as the personal equation varies in the perfection of both surgical skill and judgment, so likewise may the ability and accuracy of the pathologist be measured. It has been our experience that even the best general pathologist often is inclined to pronounce glandular changes in the cervix as malignant, while another specializing in gynecological microscopy will unhesitatingly take a benign view of the same case. This element of error is strikingly illustrated in a decision as to what constitutes a deciduoma malignum. Thus into all statistical reports in which there is a close microscopic question as to malignancy, an error may be introduced, which always tells in favor of a larger percentage of cures. For fear of dooming a patient because of an error of judgment, not infrequently the pathologist, when in this dilemma, acts upon the principle, when in doubt classify the specimen as cancer. For this reason we call especial attention to Martzloff's report, because there has been such a rigid sifting out of all questionable microscopic material In the study of the accompanying table, the widely varying viewpoints as to operability and the great divergencies between the surgical mortality and the five-year cures of several reporters is so vividly evident as to require no further comment. Such wide discrepancies in results can scarcely occur in any other domain of surgical endeavor.

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STATISTICS OF TREATMENT OF CERVICAL CANCER

THE RADICAL ABDOMINAL OPERATION

About ten years ago Jacobson compiled statistics on this subject. His work was included in the statistics of Janeway published in 1919 (Surgery, Gynecology and Obstetrics, 1919, *29*, 242). The latest collected statistics are those of Duncan (*Journal A. M. A.*, 1921, *77*, 604) which includes Janeway's work as follows:

TABLE I—CASES CURED FOR 5 YEAR PERIOD

	No. of Cases	*Operability*	*Primary Mortality*	*Of Cases Traced*	*Of Cases Operated Upon*	*Of Cases Applying for Treatment*
Carcinoma of Cervix—Abdominal Operation	5027	1720	1090	.....	.....	.....
Percentage	....	24.31	18.23	35.41	19.32	11.72
Carcinoma of Cervix—Vaginal Operation	1205	654	192	.....	.....	.....
Percentage	....	58.1	9.35	29.67	17.74	9.62

A review of the literature for the past three years by Skeel (*American Journal Obstetrics and Gynecology*, 1922, *3*, 252) demonstrates the obvious fact that the mortality rate declines with experience. He estimates that of every 100 cases of cervical cancer applying for treatment only 50 are operable. On an average, there will be a primary mortality of 5 (10 per cent), recurrences in 25 (50 per cent), 5 year cures in 20 (40 per cent), while 50 will die without operation. He believes that with such results, a radical operation lacks justification, if any other less hazardous measure offers an equivalent. Judged by this very fair standard, we have compiled the recent statistics from ten surgical clinics, and a glance at Table II will show how remarkably accurate is Skeel's estimate.

The ratio of operability varies from 15.7% to 70.6% but the oft repeated statement that low operability means high percentage of cures does not invariably hold, since Peterson has the lowest operability (15.7%), but his percentage of cures (40.9%) is about the average, as stated by Skeel. Furthermore, his primary mortality is highest (26.6%), which would indicate that he performs a very extensive operation. In the entire series, the primary mortality varies from 5.0% to 26.6%. Totalling the statistics we find that in 1539 abdominal operations, there were 608 five-year cures, or 39.5% curability. This, then, represents the present curability of cervical cancer in the hands of the most experienced surgeons throughout the world. The percentage of cures is slightly higher and the primary mortality is a bit lower than Janeway found a few years ago.

In the compilation of statistics on radiotherapy of cervical cancer, for purposes of comparison, we encounter some difficulty. While radium is widely used, and there is much literature upon this subject, there are but few reports which deal with five-year cures—not because they don't occur, but because this innovation is yet in its infancy. Heyman reports 26 cases, 85% of which were inoperable and 7, or 29% of which have been cured over 5 years. We have taken from Bailey and Healy's report, not yet published, only the cases treated by their new technique, in the Memorial Hospital of New York, which have passed the five-year test. These surgeons have had available for use maximum amounts of radium. In this table, there are 160 operable cases treated by radium 5 years or more ago, with 69 or 43.1% cures. Of the inoperable cases there were 418 subjected to irradiation, with 38 or 9% five-year cures. (See Table III.)

This analysis of cases recorded in medical literature shows that in general, radium gives a curability of 43% as against 39.5% obtained by radical operation in cervical cancer. Further, the 9% inoperable cases that were cured, would all have died under any other treatment.

From Table III it will be seen that the treatment of cancer of the cervix by irradiation has stood a very fair test in comparison with the radical operation. Our own statistics, which are fully up to date at this time, do not, however, show such good results as those set forth in most of these reports, and are not so favorable as we anticipate the next five-year report may be. In our series, there were 22 operable cases with 27.2% cures; of the inoperable cases, there were 6.7% surviving and free from evident recurrence at the end of five years. In our total of 144 cases, only 15% of which were operable, 10.4% safely passed the quinquennial test. During the last 4 or 5 years, we have always irradiated under gas anesthesia, which has rendered the treatment more effective. However, a full test has been made by us of both radical operation and the treatment with a moderate dosage of irradiation (100 milligrams of radium for 24 hours, repeated if necessary), and we are convinced that while the latter method has been of immeasureable help in the relief of the inoperable and the cure of a small percentage of those otherwise doomed, it, nevertheless, falls far short of an ideal remedy, but compares, however, most favorably with the radical operation.

As we have stated in previous paragraphs, a series of radical operations reported from the Gynecological Clinic of the University Hospital in 1913, yielded only a 33 per cent curability with a 8 per cent incidental mortality. In 22 cases treated by radium with no primary mortality, 27.2% passed the five-year period. When one adds a five to ten per cent surgical mortality, had these cases been operated upon, it will be seen that the results are practically equivalent. On the other hand, in estimating the relative values of these two plans of treatment on a basis of hospital economics, the efficiency of the two classes of patients immediately after treatment, the checking of distressing symptoms, and the morbidity, the argument is all in favor of the irradiation series. However, the distressing fact is quite evident that while irradiation is of inestimable value and removes from the surgical domain the majority of cases of cancer of the cervix, we are not as yet in sight of a real and efficient remedy for this disease in by far the overwhelming majority of cases. (See Table IV.)

We have classed as operable those cases in which the disease had not extended beyond the cervix or the body of the uterus.

TABLE II—RADICAL OPERATION FOR CARCINOMA OF CERVIX

Name of Reporter	*Journal*	*Total Applying*	*Operability %*	*No. Operations*	*Primary Mortality*	*5 Year Cures*
Martzloff	Bull. J. H. H., 24, 141, 1923	387	46.0%	178	14.2%	26.6%
Mayer	Zent. f. Gyn., 44, 617, (1920)	725	65.3%	457	20.3%	39.3%
Cobb	J. A. M. A., 1920, 74, 14	...	......	35	14.3%	57.1%
Graves	S. G. O., 1921, 32, 504	189	64.0%	119	5.0%	34.2%
Bonney	Brit. M. J., 1921, 2, 1103	...	......	100	20.0%	42.3%
Peterson	N. Y. S. J. M., 1920, 20, 313	380	15.7%	60	26.6%	40.9%
Schweitzer	Zent. f. Gyn., 1921, 45, 289	413	40.0%	177	6.78%	51.4%
Davis	Ann. Surg., 1922, 76, 395	85	37.6%	32	9.3%	40.0%
Giesecke	Archiv. f. Gyn., 1922, 115, 435	371	70.6%	224	19.6%	33.5%
Bumm	Zent. f. Gyn., 1919, I, 1	...	......	157	......	49.0%

TABLE III—RADIO THERAPY IN CARCINOMA OF CERVIX
(Asterisks denote all cases not over 5 years)

		Operable	*Border-Line*	*Inoperable*	*Recurrent Inoperable*
Burnam	N. Y. S. J. Med., 1920, 20, 316	50.00%	31%	9.0%	11%
Flatau*	Zent. f. Gyn., 19, 737, 1923	50.00%	....	9.5%	....
Bailey & Healy	J. A. M. A., 81, 65, 1923	27.00%	24%	14.5%	22%
Schmitz	Northwest. Med., 22, 77, 1923	42.85%	....	6.3%	....
Bumm	Zent. f. Gyn., I, 1				
	Series 1913	28.5%	23%	4.7%	....
	" 1914	20.0%	19%	5.5%	....
	" 1915	55.0%	39%	10.0%*	....

TABLE IV—RADIUM TREATMENT OF CARCINOMA OF CERVIX
CASES APPLYING FOR TREATMENT IN THE GYNECOLOGICAL DEPARTMENT OF THE UNIVERSITY HOSPITAL BETWEEN
January 1, 1914 and January 1, 1919
compiled by
Dr. Robert Kimbrough

Total Number of cases	*Operable (22 cases) 5 year cures*	*Inoperable (118 cases) 5 yr. cures*	*Recurrent Inoperable (4 cases) 5 yr. cures*	*Total 5 year cures*
144	27.2%	6.7%	25%	10.4%

The inoperable cases were those in which the disease had extended into the broad ligaments, vagina, or had metastasized to remote glands. Also, under this head were placed all cases of which accurate details of the extent of the growth were lacking.

As to the relief of symptoms, we find the results about the same as reported in previous papers issued from the Gynecological Department of the University Hospital.

CONCLUSION

In conclusion, we again reiterate our oft repeated statement that radium is a palliative remedy of inestimable value in the great majority of hopeless surgical cases and of absolute curative value in a small percentage. While it challenges most favorable comparison with the radical abdominal operation, nevertheless we take no issue with the skillful specialist who still adheres to the radical viewpoint, provided he supplements his operation with postoperative irradiation. As to ante-operative irradiation, we are still doubtful, and await with interest the report from those clinics in which this prophylatic plan is employed. To discard or fail to use this newer remedy as an adjunct to surgical measures in the face of such statistics as are now available should lay the objector open to a charge of criminal negligence.

FOCAL INFECTION AS A DANGER TO THE PREGNANT WOMAN*

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I wish particularly to sum up some of the impressions formed from observation of pregnant women with diseased tonsils and teeth.

Many cases subsequently referred to are from the service of my former chief, Dr. Harold A. Miller, to whom I am most grateful.

The diagnosis of focal infection in the pregnant woman is made as at other times by inspection, x-ray, history and blood findings.

The inspection and x-ray examination do not differ from that in any other patient. The history in the case of the pregnant woman is that of an individual below par physically; that is, no endurance either mental or physical, irritable, depressed, poor appetite and disturbed digestion.

The blood picture is particularly suggestive —a moderate anemia accompanied by a rather constant leucocytosis. Accepting anything under 3,800,000 reds and 80% hemoglobin as constituting an anemia, twenty-six pregnant women in whom the anemia could not otherwise be accounted for, of a total of twenty-nine showed a definite pus pocket, or approximately eighty-nine per cent. In every case observed in which the pus pocket was removed, there was a definite improvement in the blood picture within a period of six weeks or often earlier. The white count in these twenty-nine women varied from 16,200 to 5,200, averaging approximately 9,000. An anemia with a coexisting focus of infection is extremely hard to overcome, until the pus pocket has been eradicated.

Let us now consider some of the more common pathological conditions seen in the pregnant woman, the first being early toxemia, the most prominent feature of which is excessive nausea, with or without vomiting.

In sixty-six cases observed, thirty-one had tonsillar infection, sixteen had apical abscesses, six cases had both and in thirteen cases no focus was found. In other words, eighty per cent of these women had a focus of infection. We should consider in this connection that many of these women had a fair trial on other treatment, such as forced feeding, rest in bed, corpus luteum, sugar intravenously, by mouth or by bowel, bromides, luminol, etc., without marked improvement so long as an active focus of infection was permitted to remain.

Of abortion and miscarriage, not considering those cases which can be accounted for in any other way, a total of fifty-seven cases have been observed, twenty-seven of which were found to have infected tonsils, seven infected teeth, one infection of both tonsils and teeth, one acute sinus infection, and there were twenty-one in which no infection was found.

From the fetal heart blood of two of these cases, a positive culture was obtained, which I believe is significant of a blood-borne infection being a factor in the early termination of pregnancy. Twelve of these women have since gone through successful pregnancies following the removal of the focus, three aborted and one to my knowledge is pregnant and near term.

Dead fetus in utero was observed nine times when the condition could not be accounted for in any other way except by a blood-borne infection. Eight of these women had diseased tonsils or teeth, three of them both, and one showed no evidence of a focus anywhere.

In two instances a positive culture was obtained from the amniotic fluid and one from the fetal heart blood.

Considering pyelitis as always being secondary to a focus somewhere in the body, here again we are inclined to blame the tonsils and teeth, not forgetting that they are not the only portions of the body which are capable of acting as foci of infection. Of the forty-seven cases observed during pregnancy and the puerperim, twenty-seven had infected tonsils, six had abscesses at the roots of one or more teeth, seven had both tonsils and teeth diseased, two had ascending infections and in five the original focus was not found. The removal of the focus suspected has in most instances been followed by marked improvement in the kidney condition.

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* Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 3, 1923.

Late toxemia, pre-eclampsia and eclampsia, the cause of which is still unknown, certainly are related in some way to the absorption from a focus in the body.

Considering a blood pressure above 150 systolic with the presence of albumin and casts in the urine, accompanied by or not accompanied by toxic symptoms, as constituting a toxemia of the later half of pregnancy, we have observed in a total of sixty-one cases, that seventy per cent had a definite focus. Of these, eighty-three per cent were in the tonsils.

I feel that had I been more diligent and more acute in my observation several years back, this percentage would be even greater.

In the puerperium we see breast abscesses, phlebitis, and other local or general infections unaccounted for as to origin. Might it not be that a focus of infection is a factor here? The time to eradicate a focus is when it is discovered.

Sixty-two women have had tonsils removed during pregnancy. One aborted two weeks later. She had threatened to abort prior to the operation. Another aborted four weeks later, after the development of an acute sinus infection. Seventeen women have had one or more teeth extracted with no ill effects. One patient had three teeth extracted when she was thirteen days postpartum and four days later developed a mild pelvic phlebitis. The patient is safer to have the focus removed than to attempt to go through pregnancy with it untouched.

Some one will say, "Why do we not see the effects of absorption of pus more often in our pregnant women, for in every prenatal clinic we see women by the score with filthy mouths, apical abscesses, tonsils filled with pus."

My only answer to this is that we see the same condition among our laboring classes everywhere, yet only a small percentage develop what we consider the sequel of these conditions, namely, rheumatism, endocarditis, metastatic abscesses and what not.

We all know that the individual may carry her focus for years with no constitutional disturbance, but let that individual have her resistance lowered by a continual strain and the absorption from a focus becomes apparent.

The woman goes along well until the strain of maintaining a pregnancy decreases her resistance and her absorption from a focus becomes demonstrable.

CONCLUSIONS

1. That the cause of the early and later toxic condition seen in the pregnant woman has not been proved.

2. That in the absence of a proven etiological factor in the cases of early and late toxemia, the practically constant association of a demonstrable focus of infection must be considered as a possible cause.

3. That an analysis of cases coming under my observation shows that an active focus of infection during pregnancy is a very definite predisposing cause of abortion and miscarriage, the death of the fetus in utero, anemia and pyelitis.

4. That a so-called latent inactive or chronic focus of infection in the nonpregnant woman usually becomes sufficiently active during pregnancy to be a potential source of danger.

5. That the removal of tonsils and teeth during pregnancy is attended by no greater risk than at any other time.

6. That it is the duty of every one accepting the responsibility for the prenatal care of the pregnant woman, to make every effort to have that woman in the very best physical condition possible during her pregnancy, labor and period of lactation.

7. That the earlier the treatment, the more favorable the result. Procrastination leads to failure.

Westinghouse Building.

DISCUSSION

ON PAPERS OF DRS. HIRST, CLARK AND GILMORE

Dr. Floyd E. Keene (Philadelphia, Pa.): We are all familiar with the very excellent and original contributions which Dr. Hirst has given from time to time on the question of plastic surgery. I have listened with the greatest interest to his very concise summary of the factors productive of prolapse of the uterus and the methods that he has found of use in its cure. The subject is such an enormous one that the limited time allowed me precludes a full discussion of the points he has brought out. There are a few, however, that I should like to emphasize.

In my opinion, the first and most important so far as etiology is concerned, is a laceration or weakening of the fascial supports. For example, Dr. Hirst referred to the break in the triangular ligament, in the vesicovaginal and rectovaginal fascia, as well as in the fibrous connective tissue of the cardinal ligaments and also in the uterosacral ligaments. In our teaching as well as our practice in Dr. Clark's Clinic at the University Hospital, we emphasize the fact that these various lesions, such as cystocele, rectocele and prolapsus, are nothing more or less than a hernia through the pelvic fascia. Such a conception clarifies the student's viewpoint in the production of such deformities and permits the application of very definite measures directed toward the correction of the hernia. I would also emphasize Dr. Hirst's statement that the successful treatment of these various conditions depends upon an accurate knowledge of the anatomy of the part and upon a careful study of the needs of each individual case in order that appropriate measures may be employed.

Dr. Clark has reviewed convincingly the comparative results of irradiation and operation in cancer of the cervix. His conclusions are so fair, so impartial and so convincing, that I have nothing more to say along that line. The cases that are the basis of these statistics unfortunately form a very small percentage of those who present themselves for treatment. In our clinic, I believe that not more than 10% of the cases of carcinoma of the cervix are in the operable stage when first seen by us. Therefore, we have 90% coming for treatment for a condition associated with both the greatest mental and physical suffering. In discussing treatment of carcinoma, this enormous number should be taken into consideration and it is in this class that irradiation, whether by radium or by the x-ray, has proved of the greatest value. It has been my good fortune to have been associated with Dr. Clark since the beginning of the use of radium at the University Hospital, which is now some twelve years. We have followed our carcinoma cases very carefully from year to year and have reached definite conclusions, because of this experience, regarding the value as well as the limitations of irradiation.

Summarizing briefly, it seems important to us to pick and choose the type of case in which irradiation is indicated. When we first began this work, every case was accepted irrespective of the degree of involvement. We now realize that such a course is wrong. For example, a widespread extension of the malignancy contra-indicates irradiation, because sufficient dosage to have effect on the carcinoma would cause extensive necrosis, with the formation of fistulæ, which makes the patient worse than she was before treatment with little or no hope of curing the condition. As to the benefits these patients derive, we can definitely state that between 60 and 70% will experience relief from hemorrhage and foul, irritating discharge. In about 60% there will be local healing. By this I mean there will be an eradication of the carcinomatous mass and its replacement by fibrous scar tissue. In a small percentage of cases, and why we do not know, there will be a cessation of pain. This cessation may be only temporary or permanent. In a small percentage of cases, fistulæ, either vesicovaginal or rectovaginal, follow upon irradiation, but of recent years, because of improved technique, this is a rare occurrence. Not infrequently there is a marked improvement in the patient's general health with a gain in weight and strength, and while such results are not permanent, the patient has spent months or even years of comfort and usefulness. Therefore, it seems that irrespective of the relative value of operation or irradiation so far as cure is concerned, we have in radium a method of treatment which offers enormous alleviation to these wretched individuals who are sufferers from inoperable carcinoma of the cervix.

Dr. Samuel J. Waterworth (Clearfield, Pa.): I feel as though I should apologize for having accepted the opportunity to enter into this discussion, because I feel like a hybrid. I am not a gynecologist. Some people say I am not much of a surgeon. I am a sort of a mixture. I feel that what I would say would be a faint echo from the mountains. When we listen to such a master as Dr. Hirst, we, far removed from great centers, do not feel like entering into a discussion. However, I think we should present the side of the lesser surgeon in the smaller community and I would say that the writings of Dr. Hirst have been a great help and guide. I would not want him to quiz me on pelvic anatomy, but I thoroughly agree with what he says. There is one thing I am quite sure—that perineorrhaphy and plastic surgery of the vaginal walls becomes very much of a routine and the average surgeon does not pay enough attention to its specific anatomic details and therefore I think we have some very poor results.

I feel that I could do better by asking Dr. Hirst a question or two, possibly not quite apropos of his subject, but something I should like to know. Of course every part of the technique is part of the operation. I should like to know if he has any special preoperative preparation in these cases where the uterus is entirely prolapsed and edematous and possibly infected and there is lymphangitis at times? Also I should like to know about postoperative technique, as to allowing the patient to void or use of catheter, or in those cases where the rectum is redundant whether he uses any means of evacuating the rectum early for fear contents may be retained and impaction occur. As to Dr. Clark's paper, I feel in exactly the same position.

I might say that I feel that we should not stick strictly to surgery, we should not stick strictly to radium, we should not stick strictly to the x-ray and possibly we might use the cautery occasionally. I might mention one case in illustration of that: A woman who came to me with what I term, rather crudely, a rotten-tomato cervix. Upon being told that she had cancer, she immediately left me and very wisely went to a place where she had radium treatment, but she left the institution rather early. She came back to me later with marked fibrosis of the vaginal wall, with a large retention of grumous material in what was left of the uterus and part of the vagina. This was incised and drained. Later she was cauterized with the old Burns' idea of Paquelin cautery over a wide area and then subjected to x-ray treatment for a series. Later I opened her abdomen and did bilateral ligation of the internal iliac vessels. Later on she was subjected to a combination of vaginal and abdominal hysterectomy. She lived a number of years afterwards, used to clean cars during the war time when men were scarce, and finally died of apoplexy.

Dr. Thomas S. Cullen (Baltimore, Md.): I have enjoyed Dr. Hirst's paper. He flatters me very much by attributing any prolapsus operation to me. The only point I suggested in my paper was the use of figure-of-eight traction sutures instead of bullet or meso-forceps in securing the proper exposure when suturing the anterior surface of the uterus to the anterior vaginal wall.

The cervix is drawn down and the lower part of the fundus exposed. A figure-of-eight chromic catgut is then placed in the anterior uterine wall and tied. Traction is made on this suture and a second figure-of-eight placed and tied. Traction is then made on the second ligature, exposing more of the fundus. A third figure-of-eight is then placed and tied. At the appropriate time in the operation the free ends of these three figure-of-eight sutures are rethreaded and brought out through the vaginal mucosa near its cut surface on either side. They are then tied. Thus the traction sutures become the permanent sutures.

This is the only new point I have suggested. The remainder of the operation I use is a combination of the technique employed by several operations. My article appeared in the *American Journal of Obstetrics and Gynecology*, Vol. 4, No. 5, November, 1922.

I have been more than interested in Dr. Clark's study. He has been so judicious and careful in expressing his opinion pro and con that we owe him a great debt of gratitude.

In Baltimore Dr. Howard A. Kelly and Dr. Curtis F. Burnam have been so generous to us that all patients in the Gynecological Department of the Johns Hopkins Hospital, rich and poor alike, needing radium treatment have been referred to them.

The last survey of my abdominal operations for cancer of the cervix showed that 26% were apparently well five years or longer after operation.

Dr. Hirst (in closing): I do not know that I have anything in particular to add. The individual operator is naturally influenced by a sort of paternal predilection for his own operation and therefore his judgment may be faulty. I trust those of the members interested in this work will give this method a trial and form their own opinion about it.

Dr. Clark (in closing): I wish to make just one remark in closing concerning Dr. Waterworth's remarks relative to the operation which he performed in a patient subsequent to irradiation. In our large series of cases in which radium has been used, three or four of them have subsequently fallen into the hands of other surgeons who have performed a hysterectomy. Not one survives, and all of them passed through exceedingly trying postoperative stages. Our invariable rule, therefore, is not to operate upon any patient afflicted with cancer who has previously been irradiated. Many of these cases have no further manifestations of cancer in the area irradiated but die from metastasis. In such instances the course of events cannot be influenced in any way except to their disadvantage by a hysterectomy, for we all realize that when a metastasis has once occurred in cancer of the uterus the patient has passed beyond the possibility of hope from surgical intervention. We therefore strongly advise against any subsequent operative treatment after radium has been used.

In a few instances we have irradiated a few days previous to hysterectomy and our experience was so unsatisfactory that we are afraid to attempt any extirpative measure because irradiation decreases the vitality of the tissue, which breaks down easily and is more resistant to infection. Should a hysterectomy be performed, we follow the operation, after the local healing has taken place, by this additional protective method of treatment. The point, therefore, which I would emphasize in closing is, that in our experience nothing is to be gained by operations subsequent to irradiation.

THE PEDIATRIST AND CONGENITAL SYPHILIS*†

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To describe the manifold symptoms of congenital syphilis in detail would, indeed, be a work of supererogation when one considers how voluminous is the literature on this subject and how admirably it has been set forth by those who, as syphilographers, can claim a much more intimate knowledge of the whole disease than can a mere pediatrist.

What is there, then, for a pediatrist to present on the subject of this disease with which we all come into contact and into whose symptomatology have been brought by the research and observation of many workers all the symptoms of the body and all the ages of man?

It has seemed to me that the best thing I could do would be to discuss with you as a pediatrist to pediatrists the problem which congenital syphilis presents to us for our solving, to evaluate, as best I can, the factors of that problem and to indicate our proper course of action in view of it.

In the first place, we should know about the disease in general and the peculiarities which it now presents which modify our former notions of its transmitted form in children.§ We must realize in regard to syphilis, that having entered the body, the inciting organism, the spirochæta pallida becomes widely disseminated in the fluids and tissues of the body before, and sometimes even without, the occurrence of local lesions or constitutional symptoms. We must recognize that, independent of manifestations or of treatment, the disease tends to become quiescent for long periods during which the individual may or may not present the characteristic serological reactions, and yet may possess the disease and be capable of transmitting it to others. This matter of latency with the power to infect is very important because it should make us less confident in pronouncing a given subject cured and regarding him safe as to his own future and that of his contacts.

Further, the results of experimental syphilis seem to show that fundamentally there is an orderly progression in the occurrence of symptoms in the various systems of the body. Seldom, if ever, is this clearly evident in the human subject where the variations in the dosage and the virulence of the infecting organism, and in the reactions of the host to the presence of the organism in his tissues are much more numerous than in the laboratory animal. There seems to be, too, an inverse relationship between the violence of the initial reaction and the occurrence of symptoms at a later date in the less frequently involved, and, as it happens, the systems more important to life. A perusal of the work of Brown and Pearce[1-2-3] will prove of great value in appreciating the modern conception of the disease.

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§May I say here that I think the term hereditary as applied to syphilis acquired by children from their parents is inferior to the term congenital. We expect of heredity the transmission of characteristics inherent in the germ-plasm and not acquired characteristics. Whether or not we may speak of a disease as a characteristic, syphilis in the parent is certainly acquired. It is transmitted to the child; the child is infected; and, this infection existing at birth, it is congenital but not hereditary.

As pediatrists, our consideration of congenital syphilis cannot be limited to the child who is clinically syphilitic and who is brought to us for treatment. We should be doing only a part of our duty and we should miss a good many cases of syphilis at a time when they can be treated with great hope of cure.

In reality, our problem starts with the syphilitic mother, who is the maker and at the same time the infecter of her offspring to whom she seems to transfer no immunity whatever. Indeed, the newness of the tissues of the fetus, its rapid segmentation and its vascularity provide a very favorable habitat for the spirochæta. The question of spermatic transmission and the infection of the mother by her syphilitic fetus is certainly not established completely; cases adduced in support of this seem always to have a flaw in the argument against preëxistent syphilis in the mother. And if it were possible for spermatic transmission to exist, it is hard to see how, in view of the results of experimental embryology, an embryo thus early infected could ever develop.

So to the syphilitic mother we turn first because variations of the disease in her affect materially the manifestations in her offspring.

She may have been infected some time previous to her first pregnancy and whether treated or not she may be in the latent stage with no symptoms and even without positive serological reaction. She may not even know of an infection having taken place; or may think herself cured and yet have spinal syphilis. On the other hand the mother may be infected shortly before conception; or she may be infected at the time of conception; or she may be infected during her pregnancy, although the pregnant woman seems more resistant than the nonpregnant woman.[6]

If the mother be recently infected and in a stage where her fluids and tissues harbor the spirochæta in abundance, the effects on the child are likely to be more severe; and probably, failing treatment during pregnancy, she will have a premature stillbirth of a markedly syphilitic fetus. There are variables here, due to the mode of transmission and the virulence of the organism. The placenta being the portal of entry, a marked lesion there and abundant organisms in the maternal blood will result presumably in the transmission to the fetus and all its organs of a large dose of the spirochæta, which, propagating, interfere with the vital processes of the fetus and kill it. A very virulent organism in smaller dose may produce the same result. Dependent upon the intensity of these factors, the mother will have a premature birth of a macerated fetus teeming with organisms, a stillbirth at term, a clinically syphilitic infant who dies soon after birth, a syphilitic infant who lives and shows symptoms later, or, what is much less probable, a healthy infant. (This last is insisted upon by good authorities and undoubtedly occurs but we must not forget that a clinically and serologically negative infant may develop "late" syphilis.)

If the mother had her infection some time previous to the conception, and particularly if she has had treatment, the possibility of her infecting her child is less. We can conceive that in the latent stage there are fewer organisms circulating in the blood, or they may be confined to remote tissues such as those of the cerebrospinal system. Under these circumstances, the fetus may receive none or few organisms, may live and be born healthy, or syphilitic with few or no clinical evidences of his disease. He may develop infantile syphilis, or he may show nothing until the period of late syphilis or *never* show anything. The possibility of spinal syphilis in the child without any other signs must even here be emphasized. There are those who think that a child infected by its mother at a late period in pregnancy will present syphilitic symptoms mild in proportion to the lateness of the infection; but there seems to be no evidence with which to demonstrate a time of infection. However, the observation of Kassowitz[4] upon a succession of pregnancies in syphilitic mothers is pertinent. He observed that the first pregnancy of a syphilitic mother was likely to be interrupted early; that later pregnancies would be interrupted each about two months later in gestation until finally a living, and perhaps a viable child would be produced. This is of course in confirmation of what we know already as to the effect of the remoteness of the original infection.

Now the whole question of premature births and stillbirths is out of our province as pediatrists except as we cannot help being interested in the results which the obstetrician obtains in his prenatal work on syphilitic mothers. This is undoubtedly the most important and promising element in the fight against congenital syphilis from the standpoint both of its prevention of the infant mortality due to syphilis and of the production of healthy children from syphilitic parents. Syphilis produces 34-35% of all intra-uterine and puerperal deaths, from the moment of viability to two weeks' postpartum.[5] In Williams' series of over 4,000 cases the syphilitic mothers without treatment produced 48-52% of stillbirths and syphilitic children.* If this can be cut by proper treatment to about 7%, as Williams avers, many children will be born living who otherwise would have died; those who would have lived with syphilis will be healthier; and some who would have been born syphilitic will be born free from syphilis. There seems to be no form of treatment which will produce such results when applied to the child after he is born.[7]

The children whose care is properly the province of the pediatrist may be considered as falling into two groups: (1) the infantile syphilitics under two years of age; and (2) the late syphilitics over two years of age (usually over six). The former present naturally two divisions: (a) the newborn and (b) the infants of 3 months to two years.

To my mind the newborn is the most important, for our treatment, just as in the adult, will be the more efficacious in proportion as, in the first place it is energetic and continued; and in the second, as it is begun as soon after the original infection as is possible, before the organisms have had the opportunity to adapt themselves to permanent residence in remote tissues.

Our results, then, will depend largely on our recognizing the newborn who is syphilitic and whom we should treat. Unfortunately, at this moment of his life, the syphilitic child does not help us much in the way of showing the symptoms and signs of his disease. A child born with a syphilitic eruption is somewhat of a rarity. The children whom we recognize to be syphilitic at birth by a large liver and spleen, cachexia and yellow pallor (or jaundice), scaling palms and soles, osteochondritis and ascites, usually die promptly. Others in whom syphilis has disturbed the functions of the hematopoietic system will show a hemorrhagic disease of the newborn and will almost universally die. To be noted in a class by itself is the newborn syphilitic who manifests no clinical symptoms save cachexia. His color is usually subicteric; he is poorly nourished and does not gain, even with a plentiful supply of breast milk. Such a child may be reared; but he will very often die.

We come, then, to a group of children with nothing clinically, or at most, snuffles and a palpable spleen—the former quite as likely due to something transitory as to syphilis and the latter more or less equivocal unless definitely enlarged. A certain small percentage of viable infants will show bone changes to the observing eye and hand and to the x-ray.

For the appreciation of the syphilis existent in these newborn babies, we have three means at our disposal: (1) x-ray examination of the bones, (2) macroscopic and microscopic examination of the placenta and (3) the Wassermann reaction in mother and child.

The x-ray examination of the long bones in syphilitic newborn shows the characteristics of Wegner's disease, when it exists. Pierson, at the Sloane Hospital for Women, has examined by roentgenogram 128 consecutive babies that came to autopsy. The incidence of maternal syphilis in this series was 15%. Eighty per cent of the babies showed normal epiphyses by roentgenogram; the remaining 20% showed abnormal epiphyseal lines, but in only 7% did confirmatory clinical, pathological and serological signs justify a diagnosis of osteochondritis.

On the other hand, in 31% of the abnormal roentgenograms, the mothers had suffered during pregnancy from toxemia of pregnancy of the chronic nephritic type. It must be recognized, therefore, that pathological conditions in the mother, other than syphilis, may cause abnormalities of the epiphyses in the fetus. It follows that the diagnosis of congenital syphilis should not be made from a roentgenogram alone, but should always be confirmed by clinical, pathological and serological findings.

Usually when it exists, osteochondritis is evident on physical examination, showing swelling and pseudoparalysis, and the x-ray is only confirmatory. The percentage of positive cases is too small to make this a generally important check on the occurrence of syphilis, but it has its value when the placenta is negative and when serological tests or autopsies are not permitted. It may then establish the diagnosis.

The examination of the placenta is of more value. Williams[9] finds a correspondence between the findings in the placenta and the clinical condition in 91% of all cases and in 79% of syphilitic children. He feels that in the absence of a properly conducted autopsy this examination constitutes the most reliable means of diagnosis at our disposal. Jeans[10] found also a high correspondence between the changes in the placenta and the established diagnosis in the infant—95.5%. Where the two did not correspond, it was due entirely to failure to find lesions in the placenta in definitely syphilitic infants, only 27%

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*There was a large colored element in this series.

of the placentas in these cases being positive. This has been the experience of others, and the discrepancy seems to rest upon the personal equation of the interpreter of the histological picture. In no instance did Jeans find a positive placenta with a healthy infant; while Williams' series showed 1% of such. The known difficulty in saying definitely by histological examination that changes in the placenta are surely syphilitic and the possibility that a so-called healthy infant may really be syphilitic and so proved later, make this one per cent of Williams, at any rate, the exception which proves the rule that a positive placenta means a syphilitic infant. So that we may take it for granted that when a placenta is proved syphilitic, the infant is syphilitic; and in proportion as this may be found, the examination is of value. The converse, however, is not true; and we must not accept as necessarily healthy the child whose placenta is negative.

The Wassermann reaction is our mainstay in these cases, and from a study of the Wassermann reaction in mother and child, we may determine in the vast majority of them, what our course of action should be. We assume that in all cases of pregnancy, and certainly in all institutions, where ten per cent of the cases are syphilitic, a blood Wassermann will be taken on all expectant mothers.

The question of the value of the Wassermann reaction taken on the cord blood is a moot one. It has been and still is criticized. But I feel that, properly performed and checked, it gives us information that we cannot afford to overlook. This is the opinion at the Sloane Hospital for Women, where Dr. Richard N. Pierson has been working on a series of observations on the blood of known syphilitic women and infants. Dr. Pierson has been good enough to let me see his statistics, which are about to be published, and I wish here to express my thanks to him.

We feel that the cord Wassermann is of distinct value and should be done wherever the mother's Wassermann reaction is positive, and in all other cases where the history or the symptoms in the mother or the child make syphilis suspected. Indeed Wassermann reactions on all cords might well be done, for occasionally, as in a case at the Sloane Hospital reported by Fordyce and Rosen,[11] it will happen that a positive cord Wassermann will reveal an unsuspected syphilis in the mother.

Of course it must be recognized frankly that the cord Wassermann, if positive, does not of necessity mean that the child has syphilis himself. It may be due only to the carrying over of Wassermann bodies from the mother and will then disappear when the necessary control is made after two or three weeks.

In the first 173 cases which Pierson studied of mothers with strongly positive Wassermann reaction, 81% of the babies had a positive reaction. Wassermann reactions were performed on about the tenth day on 73 babies who had strongly positive umbilical cord reactions; 82% remained positive; 59% remaining strongly positive, while 23% had become weakly positive; 18% had become negative.

Cruickshank[12] found a correspondence in 95% of such cases and expresses the opinion that a majority of them become negative later. Cruickshank also observes that a negative cord Wassermann stays negative, in which Pierson concurs.

The results of the Wassermann reaction on the cord blood fall into four groups:

1. The mother is negative; the child is negative.
2. The mother is positive; the child is positive.
3. The mother is positive; the child is negative.
4. The mother is negative; the child is positive.

The first grouping is the one to be desired, for in the absence of clinical signs, it indicates freedom from syphilis. One might argue that with a negative Wassermann reaction in the mother, the cord Wassermann is useless; but it is easy to do, is corroborative of the mother's reaction, and the occasional case of group four thus discovered proves its value.

The second group tells us, as regards the child, simply that he is the product of syphilitic parents and that he has an even chance of being also syphilitic by a subsequent test. But this child, while he may not need immediate treatment, still needs close observation for a protracted period of time—two years at least.

The third group must also be watched, for they may, though it is unlikely, show clinical and serological evidences of syphilis later. Their observation can be graded by their class and need not be so constant as the children in group two. (One point in connection with this group, brought to my attention by Dr. Pierson, is the question whether this presumably healthy infant should nurse his syphilitic mother. We would not put him to a syphilitic wet-nurse, would we?)

The cases in the fourth group are the surprises which prove the value of the cord Wassermann. They demonstrate syphilis in the mother however free from symptoms or serological reactions she may have seemed. In the case referred to above, the mother, after her child showed a positive cord Wassermann, was found to be suffering from spinal syphilis.

The Wassermann reaction on the cord blood at birth must be followed up by heel or vein Wassermann reactions at two weeks or subsequently, according to the judgment of the observer, if the results are to be absolutely conclusive. But should we say because of this that the cord Wassermann is not of value? The cord Wassermann may be done without injury or discomfort to the child; it puts us in a position of advantage in that we are prepared for treatment or for observation according to its results, and we may use it to point the moral so necessary for parents of syphilitic children to appreciate, namely, that the child in whom the reaction is positive is a suspect and must have at least careful observation if it is to avoid later and less easily curable syphilis. Finally, a routine cord Wassermann is the only way to discover the cases of group four, for a later Wassermann with its attendant discomfort would never be considered in the absence of a maternal positive reaction unless symptoms should supervene. It has, however, the disadvantage of expense. But nowadays we should feel that when symptoms appear in a child who has been followed from birth without its syphilitic status having been determined, someone has failed in his duty.

But though the proper management of newborn syphilitics should keep us from seeing many of the clinical manifestations of infantile syphilis, we are unfortunately not likely soon to have, outside of institutions at any rate, a universal application of what we have learned. We shall see clinical syphilis of the infantile type at from 3 to 6 months of age up to two years, presenting one or more of the following symptoms and signs: snuffles; syphilitic eruptions; adenopathy, particularly epitrochlear; enlarged spleen and liver; condylomata, mucous patches, fissures at mouth and anus; epiphysitis, pseudoparalysis and dactylitis; eye lesions; in about this order of frequency.[8] It is important also to remember that even at this stage there are many, though not frequent, manifestations referable to the nervous system, of which convulsions and abnormal mentality are the most prominent; and that malnutrition may often have an unrecognized syphilitic infection as its basis.

It is interesting, in considering the tissues which give symptoms most frequently in infantile syphilis and, as we shall see, in late syphilis, to recall what Brown and Pearce found in their rabbits. They showed that in proportion as the initial reaction was mild, symptoms occurred in the lymph nodes, the skin, the bones and the eyes. So far as I know they have not been able to produce nervous lesions; although they have proved in the animal the penetration of the spirochæta to the cerebrospinal system as in the infections of man. A rabbit with a violent reaction at the site of inoculation in the testicle may show no more remote signs. As this reaction is diminished and finally suppressed by early castration, signs appear farther along in the series of susceptible tissues. While, as we have said, the human situation is more complex, I think if we review the symptomatology as to tissue and frequency, there is a most suggestive resemblance.

The syphilis of later childhood which presents itself from six years onward, usually presents a multitude of forms, to mention all of which would be impossible. We often find in the children of this age signs of an infantile syphilis which passed unrecognized, such as epitrochlear enlargement, general adenopathy, enlarged liver and spleen, and fissures at mouth and anus. But in only about 20% of the cases of later syphilis have symptoms of infantile syphilis been recognized before the occurrence of late symptoms. In general, the tissues which present lesions in this form of the disease are the eye, the bones and joints, and the nervous tissues. We find: keratitis, chorioretinitis and optic atrophy; Hutchinson's teeth (which are really due to syphilis in early infancy) and other dental malformations; periostitis and arthritis; abnormal mentality, convulsions, paralyses, gummata; signs of juvenile tabes and paresis; general malnutrition.

We should, I think, pay more attention to neurosyphilis than we have. Syphilitic lesions of the nervous tissues are practically irreparable and their results disastrous. While one-third of the cases of congenital syphilis show a positive spinal Wassermann, fortunately but one-ninth show clinical evidences. Still, in view of the serious possibilities of neurosyphilis and the possibility of its occurrence in any given case, a spinal Wassermann reaction should be obligatory in all known cases, before they are pronounced cured; and, conversely any case of obscure nervous symptoms in childhood should have the question of syphilis of the cerebrospinal system thoroughly investigated.

In our approach to the treatment of congenital syphilis, we should remember that the symptoms of infantile syphilis under almost any treatment, and even without treatment, tend to disappear. The blood Wassermann may even become negative and yet the individual be not cured and develop syphilis in the late form, particularly the spinal form. We should not deceive ourselves into thinking that a negative blood Wassermann is all that is necessary, and particularly we should impress this fact upon the parents of these children.

Only by early and intensive and prolonged treatment can syphilis be eradicated. The opinion of those who treat a good deal of syphilis varies somewhat according to their ability or their good fortune in regard to their control of their patients. Granted that such plans of treatment can be carried out as are advocated by Jeans and his coworkers in St. Louis, or by Fordyce and Rosen[11] in New York, to mention but two methods recently set forth in detail, the results so far obtained should make us hopeful. But as yet this is not generally possible and everyone who has had large experience with congenital syphilis will, I think, admit that treatment in the proper sense of the word is seldom possible of application. With physicians, social workers and money enough to carry out the best sort of treatment, White and Veeder[13] found after a period of years that in only 22% of their cases could they claim a real cure.

It will be only by teaching the parents of the congenitally syphilitic that they must coöperate for a long period, bringing their children for observation and for treatment until the physician is completely satisfied of a cure, that we can expect to obtain really good results.

If we look at the whole question of congenital syphilis, as we should, not on the basis of individual cases nor individual symptoms, but as it affects the life and the health and the growth of many children over many years, we will come I think, to have pretty definite ideas as to how we can best control it. As always, the best cure is prevention.

For the pediatrist, the best point of attack is in the early weeks before the appearance of active symptoms. This is why a careful study of the newborn is so valuable and important.

But a better place to attack congenital syphilis is during pregnancy. This is not often our work; but it should be our pleasure as it is our duty to hold up the hands of the conscientious obstetrician in his efforts to treat the syphilitic mother; and also to preach the gospel of the necessity of this to all other obstetricians and to every family in which we see a case of the infantile or of the late disease. We can often indicate the necessity for such treatment because of our experience with the older children of a family.

Of course back of the obstetrician stands the syphilographer in an even more strategic position; but he, unhappily, has trouble in keeping his patients under control, so that from the child's standpoint we cannot afford to rest upon the results of his efforts. The prenatal treatment of syphilis cannot be omitted if we are to conquer this disease.

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THE MECHANISM OF INFECTION AND IMMUNITY IN CONGENITAL SYPHILIS*

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Congenital or prenatal syphilis frequently offers the most complex problems in infection and immunity in this disease. This remark does not refer to infections of the child during birth by contact with an open lesion along the birth canal of the mother, but rather to the mechanism of maternal or paternal infection of the child during the latent periods of the disease in either or both of the parents. Immunity to syphilis is likewise primarily responsible for the temporary masking of its lesions and symptoms in the child, adding greatly to difficulties in the clinical and immunological diagnosis of the disease.

It is not possible to express an opinion regarding the incidence of congenital syphilis. Certainly the usual textbook description of the disease among the newborn covers but a small percentage of cases, since so many are born with latent syphilis easily escaping clinical and serological diagnosis for a period of years. Among the potential parenthood of this country syphilis is probably present to the extent of about 10 to 15 per cent but even among adults of both sexes we are in ignorance of the true incidence of this disease. For example, surveys with the Wassermann test have placed the incidence between 2 and 20 per cent, depending upon the social status of the groups examined, with a general average of about 10 per cent. Surveys based upon necropsies of subjects in large cities place the incidence at about 6 per cent in so far as the detection of lesions of macroscopic size is concerned. On the other hand, Warthin claims having detected histological evidences of syphilis in as high as 40 per cent of subjects from a rural and middle class population. The true incidence of the disease is probably somewhere between these extremes. Certainly we cannot calculate the incidence of syphilis on clinical or Wassermann examinations alone because both may fail to detect the disease in the tertiary and latent stages; nor even on the basis of necropsy examinations, because the lesions may be too small for naked eye detection. Careful histological examination of numerous organs after death is required, although in this connection there is danger of placing the incidence too high since there are no pathognomonic changes in syphilis except the presence of *spirochæta pallida,* and the histological changes of perivascular small round and plasma cell infiltrations with fibrosis can be produced by other infections and, indeed, by certain medicinal compounds. An estimate of 10 to 15 per cent is apparently conservative, although this is too high for some communities or classes and too low for others. At any rate the disease is sufficiently prevalent among adult groups to render congenital syphilis a subject of primary interest although, since it is apparently possible under certain conditions for healthy nonsyphilitic children to be born of syphilitic parentage, the incidence of congenital syphilis is not nearly as high as indicated by these figures.

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A detailed discussion of the mechanism of infection and the nature and mechanism of immunity in congenital syphilis would require more space and time than provided for in this paper and I shall confine myself to only a brief discussion of a few of the more important practical questions involved. Concerning many of these questions there are differences of opinion which space does not permit reviewing with much detail so that I am compelled to confine myself to the expression of more or less personal opinions.

What is the usual mechanism of infection in congenital syphilis? In fully 90 to 95 per cent of cases evidences of syphilis will be found in the mothers and the infection is probably a direct one of the children by placental transmissions of *spirochæta pallida.* But it may be argued that the placenta is well known to be a filter of organisms and that the child in the uterus very commonly escapes infection during septic or other infections of the mother; but *spirochæta pallida* is an exception, and by reason of its ability to infect the smallest perivascular lymph spaces is enabled by this biological quality to break through the placental barriers capable of restraining streptococci, pneumococci, tubercle bacilli and the like. In this connection may be mentioned also intra-uterine infections of fetuses with smallpox, children being sometimes born with the lesions or scars of this disease.

In the majority of cases, therefore, it appears that *spirochæta pallida* is transmitted to the fetus during the spirochetemic stages of syphilis of the mother. Of course, just prior to and during the clinical secondary stage of syphilis of the mother spirochetemia is most marked, and infection of the child is consequently most likely to occur at this time if pregnancy happens to exist; but even during the later years of syphilis, temporary periods of spirochetemia develop with transmission of pallida from old foci to new tissues and organs of the mother and if pregnancy happens to exist at this time, it is possible for pallida to invade the new tissues of pregnancy, including the fetus. However, it is likewise possible for conception to occur and pregnancy terminate at full term without infection of the placenta or child during the latent periods of syphilis of the mother, and especially after repeated pregnancies have thrown her disease into extreme stages of latency. Infection of the child depends upon whether or not anything disturbs this latency of the mother, with the production of spirochetemia. If this accident occurs the child may become infected; if it does not occur the child may escape. As I shall discuss shortly in more detail, pregnancy frequently induces marked degrees of latency in syphilis by immunological mechanism not fully understood at present. Indeed, if it were not for the danger of congenital syphilis, pregnancy could be regarded as a therapeutic measure of value for the mother, since it greatly increases her immunity and tends to protect her against the progressive development of old lesions and the production of new ones, especially in the tissues of the central nervous system.

While immunity to syphilis of human beings is seldom if ever sufficient for the self-limitation or self-cure of the disease unaided by medicinal treatment, yet some degree of immunity is produced in all cases, which tends to reduce the invasiveness and pathogenicity of pallida and to protect against the progressive involvement of new tissues and organs. These immune substances are produced in most part at least in the foci of syphilitic disease and presumably by the small lymphocytes of syphilitic exudates as well as by the tissue cells of the infected areas. Consequently it is probable, in syphilitic infection of the fetus after the secondary stage of syphilis of the mother, that the spirochetes are of reduced virulence and that antibodies in the maternal blood are likewise transmitted to the child, permitting the birth of a living child without manifest lesions of the disease. This explains why, during the early stages of syphilis when immunity of the mother is not developed and the spirochetes are numerous and highly virulent, infection of the fetus occurs so early that the woman may not be conscious of conception having occurred at all, or why in a small percentage of cases abortion may occur; but in the majority of cases syphilis is not responsible for early abortions as frequently as surmised, although it is a very frequent cause of miscarriage and premature labor. When syphilis prevents conception or produces very early abortion I suspect that paternal infection of the ovum has occurred, although since this is apparently impossible unless we grant that *spirochæta pallida* may have a granular stage in its life cycle, it may be that pallida from the maternal tissues transmitted by her blood is capable of infecting and destroying the very early products of conception and especially if conception occurs during the active stages of syphilis. However that may be, it is nevertheless a fact that we but seldom find *spirochæta pallida* in the tissues of the fetus and placenta of less than four months, even when the fetus is born without maceration and the tissues are promptly fixed after birth. On the other hand, pallida is commonly found in the tissues of the fetus and placenta of five or more months, and especially in the meninges, where the spirochetes do not disappear as rapidly by autolytic changes as they do in other organs if the fetus is macerated or fixation of the tissues is delayed. This suggests that in most instances of congenital syphilis infection occurs with pallida of reduced virulence by reason of acquired immunity of the mother, the spirochetes being conveyed to the fetal circulation and distributed throughout the tissues of the child, slowly but progressively producing the lesions of lymphocytic and plasma cell infiltration with fibrosis encountered in syphilitic lesions of adults. In numerically heavy infections or in infections with highly virulent spirochetes with little coincident immunity, the life of the child may be destroyed with the production of miscarriage or early abortion. On the other hand the infection may not actually kill but cripple or, indeed, produce no visible lesions or symptoms at birth and even for years afterward. Just what factors determine the localization of pallida in the fetus are unknown, but if specific tissue strains of pallida exist, which I personally believe is as yet unproved, doubtless this quality exerts an influence. At any rate we are more likely to find the infection in the fetus quite general as likewise the histological changes which are apt to be diffuse rather than localized, although in some cases apparently the only manifest lesion of congenital syphilis is interstitial keratitis, juvenile paresis and the like, suggesting selective localization of the parasites.

I believe, therefore, that in the great majority of cases of congenital syphilis the infection is derived from the mother. The woman may be syphilitic before conception occurs. If she is actively syphilitic, infection of the fetus may occur so early that conception may not even be suspected of having occurred, or abortion may take place at an early date. If her infection is more chronic the fetus may not be infected sufficiently to produce death until late in pregnancy, with the production of miscarriage or premature labor. If her infection is latent as the result of long-standing syphilis with the production of syphilitic immunity, the child may be infected more lightly and be born living but with the lesions of syphilis. If, in addition to chronic and latent syphilis, the mother has had previous pregnancies, which greatly increases her immunity with consequent reduction in the numbers and pathogenicity of pallida, the child may not only be born living but without demonstrable evidences of syphilis until later periods and, indeed, if the child is conceived and carried until birth without any periods of spirochetemia of the mother during this period, I believe it may escape infection altogether.

However, the woman may become infected with syphilis after conception. If infection occurs before the seventh month of pregnancy the child is likely to become infected, because spirochetemia of the mother is apt to occur during the eight weeks preceding birth. If, however, the mother is infected after the eighth month the child may escape because birth occurs before the spirochetes have extensively invaded the maternal blood with transmission to the fetal circulation. Of course, under these conditions the child may be infected during birth if open lesions exist along the birth canal, but this is not congenital or prenatal syphilis.

The question now arises: *Is syphilis ever transmitted by the father alone without infection of the mother?* Some physicians maintain that this is possible, and indeed the usual mechanism of infection in congenital syphilis. In about 5 per cent of cases the mothers may yield persistently negative Wassermann reactions and show absolutely no clinical evidences of syphilis at the time of pregnancy and birth of the child and, indeed, for many years thereafter. It is claimed that when a woman gives birth to a syphilitic child to one man and later a healthy child to another man, that this is evidence of the paternal transmission of the disease in the first instance, but as previously discussed, we believe that under the conditions of extreme latency it is perfectly possible for a syphilitic woman to do this and especially if her immunity has been engendered to a high degree by a series of pregnancies.

However, the adherents of the paternal transmission of syphilis state that in some instances women have given birth to syphilitic children and then subsequently have been apparently infected with a genuine brand new attack of syphilis. How could this be if we accept the dictum that a syphilitic individual is really immune to superinfection with *spirochæta pallida?* In other words, if syphilis of the child means syphilis of the mother, how could such a mother become superinfected or reinfected with syphilis if she has received no specific treatment? Do not such instances indicate that the mother was really not syphilitic during her pregnancy but that the child was infected direct by the father without infection of the mother?

Such may be the case but it is highly improbable. In the first place we are not now so sure that syphilis prevents superinfection. Hitherto it has been generally held that a seemingly brand new attack of syphilis indicates that the preceding attack has been cured, but since Brown and Pearce have shown that it is possible to superinfect rabbits treated with subcurative doses of arsphenamin and neoarsphenamin and, indeed, that such may actually increase susceptibility to superinfection, we are not so sure that syphilis protects against new syphilitic infection and Finger and Lansteiner may be correct in their statement that superinfection occurs in syphilis but that a chancre may not be produced owing to a modification of the tissue reaction to the local new infection as a result of the immunity acquired in the preceding disease. I believe that when syphilis is properly treated in its primary and secondary stages, complete cure in the sense of complete eradication of all spirochetes from the tissues is possible, and that such an individual may be reinfected with syphilis because the immunity is of short duration and rapidly disappears. I know definitely and decisively that this can be accomplished in experimental syphilis of the rabbit. But it is also apparently true that a new attack of syphilis, which is not merely a chancre redux or tertiary lesion, is not necessarily evidence of the complete cure of the preceding disease as it may be only a superinfection of an individual already syphilitic instead of the reinfection of a cured syphilitic. For these reasons the development of an apparently brand new attack of syphilis in a woman who has previously born a syphilitic child is not conclusive evidence that she was free of syphilis when pregnant with that child.

Furthermore it is difficult to understand how an organism of the large size of *spirochæta pallida* could physically penetrate an ovum along with a spermatozoön. Even if this occurred it is even more difficult to understand how the product of conception could withstand the presence of the invading parasite and survive for any length of time. However, both of these may be possible if it were discovered that *spirochæta pallida* has a granular or spore stage in its life history, and while McDonagh believes such is the case, the evidence is not conclusive. Granting, however, that pallida did possess such a stage in its life history it would be necessary to accept at the same time that direct paternal infection of the ovum by spirochetes or spores without traversing maternal tissues is only possible during the germinal stage of development, when the ovum is as yet uncovered by decidua, and even if this were possible, it would be necessary to assume that the infection is followed by a latent period permitting the development of the organs of the fetus. Otherwise it is difficult to understand how embryonic development could proceed in a normal manner, and it is common experience to find that in syphilitic fetuses the organs have developed normally, although monsters and lesser developmental abnormalities are sometimes produced.

At any rate it is entirely improbable that the spirochete, as we see it in syphilitic exudates, is capable of infecting an ovum at the time of conception. Personally I do not believe that this occurs in the production of congenital syphilis, and even if it did occur, it is almost sure that the product of conception would be promptly destroyed. However, after the sixth month of intra-uterine life the decidua reflexa is absorbed, and it may be that *spirochæta pallida* deposited at this time may penetrate the amnion, reach the amniotic fluid and infect the fetus by way of the gastro-intestinal tract. It is to be granted that such is not impossible and especially if the cervix of the mother is brought in contact with a penile chancre.

It is far more likely, therefore, that except in rare instances the fetus is infected by spirochetes derived from the mother. But just how the woman becomes infected when the man presents no open lesions of syphilis and, indeed, may present no evidences of syphilis at all except a history of infection some years previously, is still a puzzle. We now know that the testicles are rapidly invaded with *spirochæta pallida* and commonly show histological evidences of infection even though clinically they may be of normal size and consistency, but inoculation of semen from such organs into the testicles of rabbits only occasionally results in infection. The prostate gland on the other hand, is only rarely infected by pallida, about twenty-four cases being recorded in literature, and syphilis of the seminal vesicles has not yet been reported at all. However, it is entirely likely that the semen may be infectious at one time and not at another, so that rabbit tests of this kind conducted with single specimens of semen do not furnish a reliable index of their infectiousness.

Granting, however, that the semen is infectious, the woman is commonly infected without the production of such lesions as attract attention. If a chancre is produced in the vagina, on the cervix or in the uterus it must be quite small, and if secondary skin and mucous membrane lesions develop, they frequently and indeed usually escape detection. The woman may show no signs of infection at all except a positive Wassermann reaction or the development of tertiary lesions, and the disease may not be suspected until the birth of a syphilitic fetus.

In other words, it would appear that in seminal infections with pallida the virulence of the parasites is greatly reduced and the resulting infection relatively mild; if in addition the woman becomes pregnant, the resulting increase in her syphilitic immunity still further holds the disease in check. On the other hand, women infected by contact with the open lesions of syphilis, and especially the chancre and mucous patch, commonly exhibit the usual clinical course of syphilis, although subsequent pregnancy or pregnancies tend to increase her protection against progressive extension of the disease and especially against infection of the organs of the central nervous system.

It is to be granted, therefore, that women may be infected by men without open lesions of syphilis unless we regard the testicular infections as potentially open lesions. The male may be in good health and present nothing but a positive Wassermann reaction. The woman is probably infected by semen but infection may apparently occur without pregnancy, and for this reason every Wassermann positive male is to be regarded as potentially a source of danger to his sexual partner although the danger of infection is greatly reduced with the elapse of years after the initial infection, due to a reduction in the virulence of the spirochetes and their walling off in the testicles by fibrous tissue. Under these circumstances both the mother and child may escape infection, and syphilis of the mother alone is far more dangerous to the child than syphilis of the father. Antibody production in syphilis probably takes place in the tissues directly involved, and while these are responsible for the production of latency in this disease and tend to prevent the progressive development of old lesions and the production of new ones and afford protection against superinfection, yet the immunity depends upon the actual presence of pallida in the tissues, and upon their complete eradication the antibodies soon disappear with a return to susceptibility to reinfection. The fact that an apparently healthy mother may suckle a syphilitic child without acquiring the disease is not due to immunity on her part acquired from the child as believed by Colles; likewise the apparently healthy child that may escape infection from a syphilitic woman is probably not immune as believed by Profæta. Rather the mother in the first instance and the child in the second are now known to be actually infected in at least the majority of cases, although it is possible and indeed probable that an exchange of antibodies occurs between mother and child either way before birth. The point is that this immunity is known to be of very short duration and doubtfully protective unless living pallida are present to keep it constantly reinforced, and furthermore, a positive Wassermann reaction may be accepted as an index of this infection in mother or child even though there are no demonstrable clinical evidences of syphilis in either.

In other words, a positive Wassermann reaction is not an index of immunity but rather of infection in syphilis. The substance responsible for this reaction is not a true antibody but simply a by-product of cells and principally of the lymphocytes in syphilitic exudates capable in the test tube of causing the flocculation of lipoids in colloidal suspension with the fixation of complement. The amount of this tissue product or "reagin" is roughly in ratio to the degree of spirochetic activity but not necessarily in ratio with the clinical symptoms of syphilis, because symptoms depend upon the location of lesions and in syphilis a small series of lesions in physiologically important locations (as in the posterior columns of the spinal cord) may produce severe symptoms without much Wassermann reagin, whereas large lesions in the periosteum, the aorta, liver, etc., may produce much reagin and fewer and less severe symptoms.

It has been argued by the adherents of the paternal mechanism of infection in congenital syphilis that the fetus may be infected by the father, the mother escape, and the positive Wassermann reaction of the mother be due to a passage of the reagin from child to mother. I believe it may be granted that this Wassermann antibody may actually pass from child to mother or from mother to child, but if so, it should rapidly disappear in the absence of infection, because we know that in both human beings and rabbits the "reagin" rapidly disappears after complete destruction of all pallida, whereas the blood of the apparently healthy mother of a syphilitic child tends to react in a positive manner for a long period of time.

Since the positive Wassermann reaction is due to spirochetic activity it is not surprising that the sera of many children of Wassermann positive mothers yield negative reactions. As previously stated, it may be that some of these children have actually escaped infection. Indeed, if the child is conceived during the later and latent periods of syphilis of the mother and if several pregnancies have preceded which tend to increase the immunity and latency of the disease in the latter, the chances of the child escaping infection are very good. On the other hand, the child may be infected, but with pallida of reduced virulence. Furthermore the child may actually acquire in a passive manner some syphilitic antibodies from the mother, tending to maintain a state of latency of infection of the child and under these circumstances the Wassermann test may yield a negative reaction.

I believe, when the complement fixation test for syphilis is technically correct, that a positive reaction is unmistakable evidence of syphilis and especially if repeatedly positive, even though the reactions are but weak. On the other hand, there is a limit to its sensitiveness and the test may yield negative reactions in the presence of latent syphilis and especially in syphilis of children and the mothers of these. If there is not sufficient reagin in the blood the serologist cannot possibly detect it in the test tube. However, the sensitiveness as well as the specificity of the test are greatly modified by technical details, and whenever the test is called upon for aid in the detection of syphilis in children and mothers, the technic should be as sensitive as is possible with specificity. Even under the best of conditions falsely negative reactions will occur, not only with the complement fixation but especially with the so-called precipitation or flocculation tests, but nevertheless it is to be granted that a positive complement fixation reaction is one of the most delicate signs of syphilis and a test of great value in aiding the diagnosis of the disease in mother and child when diagnosis is not possible alone by clinical examination.

DISCUSSION

OF PAPERS BY DR. HAYNES AND DR. KOLMER

Dr. William H. Guy (Pittsburgh, Pa.): The essayists are to be congratulated upon their able presentation of clinical and theoretical syphilitic infection of the second generation. The subject is one of more than usual interest not only to the pediatrist and the dermatologist but as well to every wide-awake practitioner of general medicine. By virtue of the fact that such a large percentage of the adult population of the world has this infection that is transmitted to unborn children in a fair percentage of cases, every physician necessarily either has to care for or overlook cases of both acquired and congenital syphilis.

I feel inclined not so much to review mooted points regarding infection, immunity and resistance, as I do to discuss our evident duty as indicated by the wealth of known facts regarding the disease. Certainly every pregnant woman should have a Wassermann test. Experience gained at maternity hospitals indicates the value of this as a routine measure in picking up innumerable cases of unsuspected specific infection with resulting administration of specific therapy at the time when it will do the most good—during prenatal care of the mother. Undoubtedly many cases of congenital syphilis are prevented in this way. It is to be remembered that congenital syphilis is the same as the acquired form of the disease, differing clinically by the addition of certain stigmata due to infection of certain tissues during their development, and that the same general principles of treatment apply, with certain modifications of that therapeutic attack in keeping with the age and pathological status of the patient. The day is past when it was considered that the syphilitic infant is born "a little old man with a cold in his head." We must search out these obscure cases and institute proper treatment to the end that the high potential mortality of congenital syphilis be materially lowered.

Dr. Frank C. Knowles (Philadelphia, Pa.): I want to say only a word. The incidence of syphilis is really startling. The arsphenamin clinic at the Pennsylvania Hospital, of which I am in charge, last month gave almost 900 injections. That is one clinic in Philadelphia. Of course, we see a certain number of infants with the disease and a certain number of children. I should like to emphasize what has already been said, the importance of the Wassermann test in the mother. The means of correcting the situation is, of course, early treatment. I should also like to mention the fact that the injection of neoarsphenamin into the veins of the infant's head and an associated treatment with the official ointment of mercury is probably the best means at hand for the handling of syphilis in the infant. If the mother is treated early, frequently the newborn infant is absolutely normal.

Dr. Theodore J. Elterich (Pittsburgh, Pa.): I think we can feel very grateful to the essayists for having brought up this important subject. My recent experience shows that very many physicians in general practice have forgotten there is such a disease as congenital syphilis; likewise some of our nose and throat specialists. I saw one child five weeks of age which had been sick two weeks quarantined for diphtheria. It had all the lesions that could possibly be present in so short a time, yet it was diagnosed as diphtheria and the patient quarantined. In another case, a paralysis of the arm was diagnosed as poliomyelitis, and another case as tuberculosis of the bones and joints, and a hopeless prognosis given. Two or three of these patients had been examined by nose and throat specialists who simply passed them on, saying they did not know what was the matter with the child, and all of these cases presenting the symptoms of congenital syphilis. It is, therefore, very important that this subject be brought to the attention of the general practitioner.

Dr. Stanley Crawford (Pittsburgh, Pa.): I should like very much if Dr. Haynes would briefly outline his idea of the treatment and the period over which the child should be treated. Personally, I feel that the adult treatment of syphilis and the treatment of congenital syphilis are both one and the same thing.

Dr. Haynes (in closing): In connection with my paper I shall just review the two methods of treatment of which I spoke; namely, that of the St. Louis group and that of Fordyce and Rosen. Most of the cases under my observation for further treatment have been treated by Dr. Rosen or those who are associated with the Department in the College of Physicians and Surgeons, so I noted what the conclusions were and I thought it might be interesting as part of the discussion. (1) The first conclusion of Fordyce and Rosen is that every prospective mother should receive a routine Wassermann examination. (2) The proper treatment of a syphilitic mother during pregnancy will undoubtedly result in the birth of a healthy infant. (3) Every infant born of a mother or father with syphilis should have a Wassermann test made at birth; again two weeks later, then every four weeks up to six months, and after that every three weeks up to two years. If the reaction is negative with all these tests and no clinical signs have appeared, the baby has in all probability escaped the infection. (4) A certain number of infants born of mothers with strongly positive reactions give a positive cord reaction but subsequently all tests are negative and they fail to show any clinical manifestations of the infection. They should, however, be kept under observation for at least two years. (5) Occasionally an infant with active clinical signs of syphilis will give negative serologic findings, usually only temporarily. The clinical diagnosis should always take precedence over the laboratory diagnosis, and proper treatment should be instituted. (6) In the treatment of our cases having congenital syphilis we have adopted as the method of choice the systematic intramuscular injection of neoarsphenamin and mercury —1-6-8 injections of neoarsphenamin at weekly intervals with rest 6-8 weeks:

.1 gm. 2-12 weeks
.15 gm. 3-9 months
.2 gm. 1-2 years
.25-.3 gm. 3 years

2-10-12 weekly injections H_9Cl_2.

1/10 gr. 2-6 weeks
1/8 gr. 6 mo-1 year
1/7 gr. 1-2 years
1/5 gr. 2-3 years
1/4 gr. over 3 years

Two courses with possibly a third of H_9Cl_2.

We have not only had good clinical results, but we have also been able to retain minute reactions in 14 out of 47 with plus blood reactions when treatment was begun within the first few months. To our minds this proves that systematic treatment, begun early, in the first week or two where possible, will result in the clinical and serological cure of the infant.

INTRADERMAL VACCINATION*

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Since the discovery of vaccination by Jenner, observations and experimental work in the nineteenth century led to studies of revaccination. Especially through Pirquet was the subject of cutaneous vaccination clearly presented. Experiments of Chauveau in 1866, undertaken on animals and men, showed that subcutaneous and intravenous injection of vaccine produced an immunity against revaccination.

The local vaccination phenomena in subcutaneous injections were tumor formations in the region of the injection, and in a few cases vaccine exanthemata were observed. Experiments with subcutaneous inoculations were made about the same time, and with similar success by Von Frohlich, on a cow. Experiments with intrapulmonary and intraperitoneal injections of cowpox also were successful in producing immunity.

All these attempts show that the vaccine virus does not alone exert its specific action upon the superficial epithelium. In the period from 1906 to 1910 Von Noble and Knopfelmacher did extensive work on the subject of subcutaneous inoculation. The chief results of the latter's work was that through subcutaneous inoculations with 1 cm. of lymph in a dilution of 1 to 200 he succeeded in securing immunity against pox vaccine in men.

The symptoms of successful vaccination are: In the site of injection between the tenth and fourteenth day a circumscribed infiltrate and trythema show themselves. The erythema disappears in a few days, but the infiltrate remains up to several weeks. The size of the reaction depends on the amount of vaccine injected.

In revaccination by means of the subcutaneous method there occurs within twenty-four hours a specific reaction, which consists of redness and edema or infiltration at the site of injection. This reaction comes also with avirulent lymph. Knopfelmacher explains it is an early reaction, that is an allergic reaction in the sense of Pirquet, and designates it as diagnostic for those already successfully vaccinated for cowpox disease; and also in variola in men not yet inoculated. He also emphasizes the practical importance of subcutaneous inoculation and points out its milder course in contradistinction to that of cutaneous inoculation—that is, the usual absence of fever, milder general symptoms, the avoidance of disfiguring scars, guarding against secondary infection and transference to the eye, etc. Hitherto there was no practical method of vaccination avoiding the skin as a region of reaction.

There appeared in 1910 the work of Novotny and Schick on the intracutaneous injection of cowpox lymph on dogs. The application of intracutaneous vaccination in the human being was not more fully brought out. It was assumed that by proper technic the intracutaneous inoculation must give atypical reaction course of itself, which on the one hand avoided the above mentioned disadvantages of the cutaneous inoculation, and on the other hand is much more accessible to the eye and observation than the course followed by the deeper acting and less readily observed processes of the vaccination in the subcutaneous inoculation.

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This led up to the studies of Karl Leiner on intracutaneous vaccination, which showed that there follows from this process, first, an immunity against cowpox virus, and second, a typical vaccine reaction different from that of the cutaneous method. In this technic of inoculation he used as diluting fluids for the vaccine, normal saline solution and sterile water. This requires only shaking for proper fixing. A dilution of 1 part vaccine to 100 parts of the diluting fluid was used. The amount used for injection was 1/10 of a c.c. and to avoid the adherence of lymph to the skin when the injection is made, the needle with which the injection is done must not come in contact with the vaccine. The needle must be introduced 1½ cm. (we found 1 cm. usually sufficient) into the skin and the point must so lie that during the injection the typical intracutaneous bleb arises.. At first two injections in the upper arm were made, but later he made only a single injection. Practically it is not necessary to be overexact in the dilution of the lymph. Some of our own injections were done with a dilution of as high as 1 to 120 and as low as 1 to 70.

Leiner proceeds as follows: Use a syringe of 1 to 2 c.c. capacity. Boil two needles, a large one and a fine one. With the larger needle, the lymph, which is previously diluted, is drawn into the syringe. Then remove the large needle and put on the fine needle, being careful not to force the fluid to the tip of the needle, and inject. In this respect each man will find his own method satisfying. Apothecaries in Vienna have now varied lymph dilutions in ampoules. After withdrawing the needle the injection point is cleansed with alcohol and iodin. Through nonobservance of one or the other of these precautionary methods Leiner got a vaccine reaction which resembled the cutaneous vaccination. However, in these cases the reaction did not come to great sluggish pustules on the surface, with subsequent large scars, but only to hard vesicles a few mm. in diameter with minimal scar formation.

Leiner describes a typical intracutaneous vaccine reaction, which we have also observed in our cases, as follows: A child two years of age — not previously inoculated — was inoculated with 1/10 cm. of a 1-100 dilution. After twenty-four hours at the site of the injection bleb, there was an area 10 mm. long and 6 mm. wide of intense redness, gradually paling to the periphery, with soft infiltrate not sharply circumscribed in the center, but elevated somewhat above the level of the skin. After the second day the central intense redness had a diameter of 3 to 6 mm. Around this was a more distinct rose red court of 6 mm. width, and corresponding to the intensive colored part was a rather flat skin infiltrate about the size of a linseed, more distinctly bounded than the day before. On the third day the redness was paling and the infiltrate unchanged; fourth day infiltrate somewhat softer with livid red discoloration over it; fifth day infiltrate same, the discoloration was weaker and slightly yellow; sixth day the infiltrate was only indistinctly perceptible to the touch and there was a yellowish discoloration over it; seventh day infiltrate hardly perceptible, minimal discoloration over same.

With this phase the vaccine course is by no means ended, for there follows after a lapse of several days a change at the point of inoculation, so that on the thirteenth day at the site of the earlier infiltrate, a rather thick and sharply circumscribed infiltrate occurs situated in the skin, about the size of a small pea. This part is slightly elevated above the skin, but it shows no discoloration. On the fourteenth day the infiltrate is thick and distinctly bounded, 10 mm. in diameter, palpable subcutaneously and easily displaced from the tissues beneath, but the skin itself is adherent. Over the infiltrate is a slight redness. The fifteenth day the infiltrate has a diameter of 15 mm. Over the infiltrate there is a rather intense redness of 20 mm., with irregular boundary. The whole part is somewhat edematous and elevated above the skin. The sixteenth day the diameter of the infiltrate is 20 mm., and is rather thick and sharply circumscribed. Over the infiltrate is an intensive redness of about 20 mm. in diameter. Around this is a pale red border with a few marked red spots about 10-15 mm. wide, and around this again an intense red garland-shaped boundary of 5 mm. width. On the seventeenth day the reaction is unchanged. The eighteenth day the infiltrate is unchanged but the redness on the outer part is somewhat paling. The twentieth day the infiltrate is unchanged. In place of the earlier redness there is a yellowish pigmentation. The twenty-second day the infiltrate is not so dense —15 mm. in diameter. The discoloration over it is beginning to fade. The twenty-seventh day the infiltrate is about the size of a bean, moderately dense, not so sharply circumscribed, and has livid yellowish pigmentation over it. The thirty-first day there is a soft infiltrate between the size of a pea and linseed, and not sharply circumscribed. There is no fever during the entire course and no systemic reaction. The general run of positive cases in our experience followed this course with only small temporary and gradual differences.

The beginning of the second reaction in most cases occurred between the tenth and fourteenth days after vaccination and it seems certain that earlier beginnings than the tenth to the twelfth day occurred where the lymph dilutions were the strongest. In a few cases the acme of the vaccine reaction was observed from the eighth to the tenth day so that a direct transition of the primary reaction into the real reaction occurred.

If we now review the process of intracutaneous vaccination we see two reactions: the primary, which reaches its high point 24 to 48 hours after injection, and the secondary, which occurs 10 to 14 days after the injection, or after the almost complete disappearance of the symptoms of the first reaction.

Near-by intracutaneous injections with the same amount of milk glycerin staphylococci and streptococci vaccines, after the first traumatic reaction in twenty-four hours, can easily be differentiated. The infiltrate in the comparative injections was never so sharply circumscribed, but more diffuse, or it did not usually come to the formation of an infiltrate, but only to an edema of the affected spot. Then, too, the infiltrate had already disappeared in the earlier days, while in the cowpox vaccine it was distinctly perceptible to the seventh day. In several cases it remained the size of a linseed or larger until the beginning of the second reaction, so that one distinctly saw that reaction from this infiltrate again failed. The redness of the comparative injections never showed the differentiation between central and peripheral zones.

The beginning of the real intracutaneous vaccination processes is shown by the quick occurrence of a dense, distinctly circumscribed infiltrate between the tenth and fourteenth days (occasionally as already mentioned somewhat earlier) after the injection.

Usually the infiltrate reaches its greatest extent in three days, and varies in diameter from 20 to 30 mm. It has an uneven surface, is movable from the underlying tissues, but is adherent to the skin. The resolution of the infiltrate begins several days after the height of the reaction has been reached, and first manifests itself in a gradual decrease in size and then in a lessening in density. In most of our cases observed for a longer time we found at the expiration of 8 to 10 weeks an infiltrate persisting, about the size of the head of an ordinary pin. After 4 to 5 months the skin in this region was still slightly thicker than the normal skin. In most cases, during resolution there is a fine scaling of the skin covering the infiltrate.

In several of Leiner's cases and in eight of our own there was an atypical vaccine course in which, in place of the infiltrate of the primary reaction, after the fifth to the thirteenth day there was a sort of a node formation in the skin, which in 12 to 48 hours was converted to a hard glassy blister 5 mm. in diameter, and 1 to 3 days later there formed under the blister an infiltrate that corresponded to the intracutaneous vaccination. The blebs dried in five days without pustulation, and in three cases pustulation occurred. The healing followed in a few days, when the dry crust fell off, and because of its small size there was practically no scar. These atypical results were due to an error in technic, the injection being made too superficially, and most of them occurred in our early attempts. It is really a mild cutaneous reaction with practically no scar formation.

Leiner reports one case in which, on the twelfth day after vaccination, a papilla formed at the point of entrance of the needle, which proceeded in a mild way much as a cutaneous process. He concluded that the late appearance of this cutaneous reaction may be traced to the minimal amount of virus, which either in inserting or withdrawing the needle adhered to the skin, due to an error in technic.

Leiner's studies showed that the intracutaneous method effected a successful vaccination in men, and that it has a distinctive reaction, showing that the process does not exert itself on the superficial layers of the skin as in the cutaneous method, since it is excluded from the external surface by the intact skin. He also showed that the well-known and rightly feared cutaneous injuries (infection from eczema and other skin diseases; transference to the eye, genitalia, etc.; secondary infections—tetanus, etc.) were avoided, and also the disfiguring scar; neither has he seen any inoculation injuries. No dressing is required, as there is no external wound.

Compared to the subcutaneous method, the intracutaneous ran a milder course, for we never see so extensive an infiltrate and erythema, even when the intracutaneous lymph was used undiluted, while in the subcutaneous method a dilution of under 1-100 was never used. A further advantage over the subcutaneous is that the inoculation process is more superficial and more accessible to observation and control.

We have used this method in St. Joseph's Infant and Maternity Hospital, where among our run-abouts and school-age children in previous years we have had cases of severe mixed infections, due to the children removing the dressings and comparing arms, in spite of all precautions taken. Over one hundred cases have been successfully vaccinated by this method. In eight of these cases previous single attempts by the regular cutaneous method had failed, and in three of the cases three attempts had failed cutaneously.

In our entire series of cases thus far attempted we have had only four failures, besides the atypical cases cited above. I have also used this method in a number of cases in the State Dispensary for Children and in my private practice. In only one of these cases the vaccination failed, which failure may have been due either to faulty technic in mixing or injecting the lymph or due to a weakened or faulty virus.

The intracutaneous method will probably not displace the simpler cutaneous inoculation in the masses. However, where one fears inoculation injuries, as in skin diseases, and where the occurrence of scars is to be avoided, as well as where general systemic reaction is feared, we have found this an ideal method.

DISCUSSION

Dr. Jesse L. Amshel (Pittsburgh, Pa.): Dr. Berney has indeed given us an able discussion upon intradermal vaccination and has handled his subject with forethought and acumen. Whether this new method will make the same impression upon you as it did upon Dr. Berney and myself who witnessed its application at first hand in Vienna, is a question, and will be determined only by your success in its application.

Concerning ordinary vaccination, the timid mother fears infection, the uneducated mother doubts its efficacy and the fond mother objects to the scarring. Most of these objections are overcome by the intradermal method and so the idea of apparent cruelty is almost entirely eliminated.

It was my good fortune to see this method applied on numerous patients while attending various clinics in Vienna and I heartily endorse every statement made by Dr. Berney as to the superiority of the intradermal vaccination over the old scarification process.

To quote eminent authorities on this subject besides Dr. Leiner aforementioned, I may name Dr. Knopfelmacher and Dr. Lehndorf. Both these men highly recommend and use this method exclusively in the Franz Joseph Hospital with excellent results. More fully to illustrate the efficacy of this process, Dr. Lehndorf asked for a volunteer in our class. The volunteer proved to be a doctor from Brooklyn who was most skeptical, having been unsuccessfully vaccinated at three different times. We had the opportunity of watching the reaction from day to day. The local symptoms were virtually nil except for the primary erythema and later the nodular infiltration which remained for approximately a month. The pain was negligible.

Summing up the advantages of intradermal vaccination we find that: (1) It lessens the chance of secondary infection such as impetigo and tetanus. (2) It reduces the chance of an eczematous complication. (3) The usual disagreeable symptoms are present only in a modified form. (4) Its greatest appeal is the absence of the disfiguring scar.

The intradermal vaccination undoubtedly has many good points in its favor, notwithstanding the fact that custom becomes habit. The old method will still be used by many physicians and the new method may not be adopted until public opinion forces the issue.

Dr. Martin T. O'Malley (Scranton, Pa.): The only regret in connection with Dr. Berney's paper is that he has not some of his cases inoculated by this method present to show you in their varying degree. If he had them here there isn't a doubt in my mind that every man here would be a convert to this method. Leaving the cosmetic effect and other advantages aside, the virtue of this thing to me is the ultimate result in getting the public to go along with vaccination with even less friction than there is at the present time. There isn't anybody now of any sense who will decry vaccination. In other countries we are hearing of outbreaks of smallpox here and there where vaccination has fallen into disuse. There is a tendency in that direction in this country. I dare say it is in nearly every community, and it is perhaps a recognition of that fact that made the State Department of Health this present year issue even more stringent orders with reference to vaccination. As the speaker before me said, our conservatism and our slavery to custom or habit will make the change probably a slow one; but if this method can be demonstrated the ultimate aim is to react upon the value of vaccination and upon the prophylaxis of smallpox.

Dr. Charles E. Thomson (Scranton, Pa.): The disfiguring scars resultant from the old method seem to me to fade into insignificance for those of us who remember the inconvenience and pain of our last vaccination. I know that in my case it was extremely painful and annoying and lasted a long time, I thought. When we have a man like Dr. Berney, who is as thorough in his work as we know he is, recommending this method, I think it is the highest type of recommendation we could have.

Dr. Abraham L. Barbrow (Pittsburgh, Pa.): As one of the school medical inspectors in this city who has just completed three hundred and fifty old-fashioned vaccinations, I feel more or less qualified to speak on this subject.

This new method is contrary to law. One of the laws of this state and most states requires every child going into a public school or parochial school to show either the mark of successful vaccination or smallpox or a certificate from a doctor that they have just been vaccinated. How are you going to tell when a person has been successfully vaccinated?

One of the vital questions with regard to the subject of vaccination has unfortunately been left out of Dr. Berney's paper, and that is when the child comes to school and tells you that six or seven years ago he was injected intradermally and had a successful vaccination, how are you going to know he is telling the truth? Are you going to base your opinion on a little elevation the size of a pin-head or on a certificate?

I have just completed something like three hundred and fifty vaccinations. Most of the children had never been vaccinated before; a few of them had but it had not taken. So far (it is a month now) very few of them have lost any time from school at all, and those who have been away are practically all of them back.

In fourteen years of this work in Pittsburgh we have had no serious complication.

I think one of the greatest difficulties we have to overcome is the psychological fear of a good many children. The doctor uses two needles, a large one and a fine one. The two needles are boiled, and the lymph is drawn up into the syringe with the larger one, which is then taken off and the other needle put on. Does this not permit the entrance of a certain amount of air? Is that not painful and doesn't that produce any discomfort? Would it not produce a psychological fear in the child's mind to see all those needles?

I should also like to ask about the marks or signs of this vaccination years and months after vaccination has been done.

Dr. George A. Clark (Scranton, Pa.): I have been able to follow Dr. Berney's work at St. Joseph's from rather an impartial point of view—that is, as pathologist in reviewing from day to day the intradermal tests and the cutaneous tests in two different series that were run. The comparison was most striking. One cannot help but be impressed with this type of work when one remembers the cutaneous vaccinations that were insisted upon in the army, with their ulcerations, as compared with the advantages of the intradermal method. In the army the mutilating scar did not necessarily prove a certificate against revaccination, and I know personally if I was required to be vaccinated again I should far prefer the intradermal method to the cutaneous.

Dr. Thomas H. Weaber (Allentown, Pa.): We just finished the preliminary examination of the school children in my city, and as Head of the Division of Child Hygiene we found about sixty children who had certificates from doctors showing they were successfully vaccinated and who have no scar. I fear if this other idea were instilled in the minds of the physicians of Allentown we should have more trouble. The reason the State Department of Health is so severe this year is on account of the physician. For the last fourteen years I have had this job and I have investigated every case that went wrong, and I am sorry to say that the cases that went wrong were not sufficiently taken care of by the physician. They were not cupped, but if the celluloid cup is used the child would not be inquisitive and pick around the scar. And another point is, if the doctor would not vaccinate so severely, we would not need the intradermal method.

Dr. Berney (in closing): The doctor from Pittsburgh said that it would be rather difficult to look for the pinhead point four or five years after vaccination. It is not necessary to look for this point, because it does not exist. In at least six months' time it entirely disappears, so that no sign of the vaccination whatever remains; there is no scar in this method.

As to the ordinary cutaneous scar of vaccination being identified I think authorities still differ on this point, some want one thing and some want something else. Personally I have a bullet wound that I have shown to several physicians, and they have been willing to accept it as a vaccination.

As to the parents' objection and the child's fear of being injected I think that, if this method is explained to the fathers and mothers as I have done in a number of cases, assuring them that they would not get the secondary systemic results or sore arms they get in the other method, they will readily acquiesce in the intradermal injection.

Concerning the amount of air in the needle there is undoubtedly a minimal amount there, but the needle is of a fine caliber, and therefore the air is exceptionally scanty. I have never seen any ill effects from this whatever, and I am sure we can totally disregard it.

In the absence of the scar one physician said we would have to depend entirely upon the veracity of our colleagues. This we do every day in other medical matters, and I am sure we are not willing to go on record as being unwilling to accept their certificates in cases of intradermal vaccination.

The vaccination cups that the Doctor mentioned I have not used for the past ten years. It seems to have been generally understood that they were rather objectionable, and sterile dressings were far superior and better.

INSULIN AND DIET IN DIABETES*†

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The extract of the islands of Langerhans which I now use exclusively is Iletin (Insulin, Lilly), first received through the courtesy of the Insulin Committee of the University of Toronto. I have tried other "just as good" pancreatic extracts, said to be especially prepared for oral administration, but in my clinic they proved nonpotent. Neither have I seen any reports of a pancreatic extract "just as good as insulin" which convinced me that further investigation was merited.

For the guidance of the busy physician and the benefit of the sick patient, I hope the time will soon come when all therapeutic remedies requiring administration to the patient must be studied clinically by a similar committee before their general distribution to the medical profession.

Insulin does not act when given by mouth and it is best administered subcutaneously. The dose of insulin varies so much with the individual case that an average dose has not been estimated.

The following points aid me in deciding the initial dosage in the beginning of treatment: (1) the amount of acidosis as evidenced by laboratory tests; (2) the stage of nutrition of the patient; (3) the height of the blood sugar; (4) the total daily caloric intake which the patient will need. (In giving this last point I wish to state that I agree with Allen's view that the total calories and not the carbohydrates alone, must be considered.)

The degree of acidosis is largely the determining factor of insulin dosage, especially when beginning treatment. There is no question that the higher the acidosis the larger the insulin dose must be. The following cases illustrate this point:

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* Read before the General Meeting of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 4, 1923.

† The dosages of insulin given in Dr. Petty's paper have been corrected to conform with the standard in use after November 15, 1924, on which date the unit of insulin was increased 40% in strength.—Editor.

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McDevitt: Initial blood sugar 714 mgs. at 12:45. In 6 hours received 48 units of insulin. Blood sugar 72 mgs. at 6:45. Emaciated and no chemical acidosis. Reduction of 642 mgs. of sugar in 6 hours.

McKee: Initial blood sugar 517 mgs. Deep coma, acetone odor to breath, acetone and diacetic acid reactions in urine, plasma CO_2 16.6. In 6 hours received 84 units of insulin. Blood sugar 370, plasma CO_2 21.4. Eighty-four units of insulin used. Reduction of 147 mgs. of sugar in 6 hours.

The state of nutrition is next in importance, the well-nourished reacting more slowly and maintaining a more constant level than the emaciated.

The height of blood sugar is certainly an aid but can only be regarded as qualified by the two preceding factors. If the patient is thin and free from acidosis, as was McDevitt, the initial dose must be small, even if the blood sugar is above 500 mgs. per 100 c.c. of blood.

The lowest initial dose that I have given is 3 units daily; the highest first dose 30 units, repeated every hour for several hours.

The lowest daily dose that any of my patients is receiving is 3 units; the highest daily dose is 60 units. This last mentioned case began treatment August 23d and still requires 48 units every 24 hours.

My custom in dividing the total daily dose is: 6 units, or under, 1 injection daily; 12 to 36 units, 2 to 3 injections daily; 36 units, or over, 4 injections daily. (Give 10 grams of the total daily carbohydrate allowance after the administration of the fourth or midnight dose.)

The greatest and probably the only danger of an overdose of insulin is hypoglycemic collapse, of which the objective findings are more important than the subjective symptoms. The symptoms usually complained of are nervousness, weakness and excessive gnawing hunger. Since most of the severe diabetics are nervous and apprehensive, I place more value upon the observations which are prompted by the patient's complaints and tremor, anxious expression, profuse perspiration, and an increase of the deep reflexes over previous findings—the usual physical evidences of a hypoglycemia. When they are found to be present, blood is immediately taken for a sugar determination and then 15 or 20 grams of carbohydrates administered by mouth.

If the condition is not markedly improved within 30 minutes (and by this time the blood sugar estimation should be completed, if giving definite information of hypoglycemia), the carbohydrate administration is repeated. Should the patient be unconscious and unable to swallow, 15 to 20 grams of glucose intravenously will restore the patient to consciousness and relieve all symptoms within a few minutes. Should there not be at hand a sterile solution of glucose, a hypodermic of 1 c.c. of a 1/1000 epinephrin solution will temporarily restore consciousness and permit the patient to swallow carbohydrates.

I grant that hypoglycemic collapse is a real danger but I do not think that a diabetic patient should be sent to his home, there to continue the insulin treatment, with the danger of collapse as the big thing for him to watch. As I say, it is real, but in my opinion not nearly so dangerous as a constant slight glycosuria. A constant glycosuria, no matter how slight, in a proven diabetic, is proof positive that the diabetes is increasing in severity.

I have many patients in their homes (after at least two weeks in the Memorial Hospital), all sugar free, continuing their insulin treatment, with not one collapse since they left the hospital. I attribute these good results in patients at home to the careful instruction they have had, especially in the details of diet and the accurate weighing of their foods, and to the fact that I endeavor to keep their blood sugars not lower than 130 mgs. per 100 c.c. of blood, which level appears to be sufficiently low to prevent a strain upon the pancreas.

I believe the physician's fear of an overdose of insulin to be responsible for some of the failures in treating diabetic coma, yet if blood sugar estimations are frequently and carefully done and a solution of glucose at hand, ready for intravenous use, this fear is not founded upon fact.

I have used insulin in:

1. Mild diabetes.
2. Severe diabetes.
3. Diabetes complicated by advanced pulmonary tuberculosis.
4. Diabetes complicated by croupous pneumonia.
5. Diabetes complicated by otitis media and mastoiditis requiring operation.
6. Diabetes with carbuncles.
7. Diabetes with infected finger and palmar abscess.
8. Diabetes with gangrene and severe infection of the lower extremity requiring amputation above the knee.
9. Diabetic patients requiring laparotomy.
10. Diabetes with beginning coma and also those in deep coma.

All the cases which I have treated received their first fourteen days of study and treatment in a hospital. I consider such a period of hospitalization absolutely essential both to determine the proper daily caloric intake of food and the proportion of protein, fat and carbohydrate of that intake, and if insulin is required, the dose needed to control the diabetes.

I have had a few cases referred to me who would not consent to hospitalization. These I have refused to treat, not yielding to their plea, "Do the best you can, Doctor, but treat me at home;" for the best a physician can do for a diabetic can only be accomplished by a short period in a good hospital with an efficient department of diabetes. If we have the courage of our convictions and do only our best, it will not be long until the diabetic, beginning treatment, will have the same view as the patient requiring an abdominal operation and say, "Of course, that means a hospital for me."

The difficulties for the physician in the proper treatment of diabetes at home, especially since Banting's discovery (insulin demanding more accurate chemical as well as diatetic control), consume too much time and energy to repay either the general practitioner or his diabetic patients. Yet, I am sure the physician should have a working knowledge of these emergencies of diabetes: 1, coma; 2, operative cases; 3, diarrhea and acute infections.

COMA

I have had ten cases of deep coma with eight recoveries. The two deaths occurred in cases that had been in coma at least 72 hours before receiving insulin treatment and they died with a normal blood sugar and no acidosis, indicating that the cell destruction from the chemical poison incident to a prolonged diabetic coma is evidently so extensive that recovery is impossible.

The eight remaining cases had not been in deep coma over 24 hours and they all recovered. A careful study of the records of these cases convinces me the course of treatment which I follow and which I am about to briefly outline, is of value, although I claim no originality for this or any other method of treatment used in my clinic.

If there is a definite glycosuria, a strong acetone and diacetic acid reaction in the urine and a heavy acetone odor to the breath, blood is taken for a glucose and plasma CO_2 estimation. The patient is then immediately given 30 units of insulin subcutaneously, followed in 15 or 20 minutes by 20 grams of carbohydrates in the form of orange juice by mouth. If the patient cannot swallow, administer intravenously 15 grams of glucose.

A blood sugar and plasma CO_2 estimation is repeated within one hour and further insulin dosage is regulated by the laboratory reports on plasma CO_2 and plasma sugar.

Each of the cases I treated required at least 90 units, some 300 units, sufficiently to clear up the acidosis to restore consciousness. The rapid reduction of acidosis and restoration of consciousness I consider imperative if the coma patient is to be given his best chance of recovery.

When first advocated such doses were severely criticized, but numerous reports from many clinics indicate that only with heroic doses, repeated frequently and controlled carefully by blood chemistry, can we hope to have a fair percentage of recoveries from deep coma. We must remember, however, that coma or any form or complication of diabetes requiring insulin cannot be restored to health and usefulness by insulin alone.

In coma, in addition to insulin, we must combat desiccation by the administration of at least one litre of liquids every six hours, either by mouth, proctoclysis, hypodermoclysis or intravenous injection. Cardia stimulants must also be administered and the patient kept warm. All this requires hard work and the constant, personal supervision of the chief in charge of the case.

OPERATION

Prior to insulin the surgeon looked sad and hesitated when confronted with a severe diabetic needing operation, for they all did badly and many died. But now they have the pleased expression, characteristic of all surgeons when asked to do an operation. With the proper use of insulin and an accurately measured and carefully selected diet, the surgeon can now proceed as with a nondiabetic. The following case especially emphasizes this point.

Wm. H., diabetes with gangrene of the right foot and leg. Duration of diabetes, 5 years. Nine months before admission to Memorial Hospital, an ulcer appeared on the little toe of the right foot, which soon became gangrenous and although dry, gradually extended. At the time of admission there was an involvement of all the toes and the foot, as far back as the middle of the metatarsals. Moist gangrene extended to the middle third of the leg and a diffuse inflammatory cellulitis to the knee joint. Patient complained of constant, severe pain. His temperature was 101.4°; pulse 132.

Laboratory findings: *Urine*—acid; 1.021; alb. plus; gluc. 2 plus; acetone neg. *Phthalein*—1st hour, 4%; 2d hour 20%;; total 24%. *Bl. Urea Nit.*—14 mgms. *Plasma Bl. Sugar*—281 mgms. *Bl. Wassermann*—negative. *Slight secondary anemia; no leucocytosis.*

Patient was admitted late in the afternoon and was immediately given 12 units of insulin followed by 10 gm. of carbohydrates. This was repeated at midnight and the blood sugar at 8 a. m. next day was 147. Twelve units more of insulin with 10 gm. of carbohydrates were then administered.

He was operated upon at 12 noon under nitrous oxid-oxygen anesthesia, the leg being amputated at the upper third of the thigh. Operation completed at 1:20 p. m.

Blood sugar immediately before operation was 185 mgm., and blood sugar postoperative, 235 mgms., showing an increase of 50 mgm. even when gas and oxygen anesthesia was used. Twelve units of insulin were administered at 2:35 p. m., twelve units at 5 p. m., and twelve units at midnight. Carbohydrates were of course administered after each dose of insulin.

The patient had a good night, with temperature normal the morning after operation, and remaining so throughout his convalescence.

Blood sugar the morning following operation was 285 mgms. For several days he was given 48 units of insulin daily, with a food intake of 1,800 calories. His daily insulin dosage was gradually decreased to about 30 units and his blood sugar ranged between 117 and 133. Surgically he did as well as a nondiabetic patient, being out of bed in 25 days, happy and free from pain.

Recovery in such cases is impossible without insulin.

DIARRHEA

It frequently happens that severe diabetics, undergoing treatment, have a troublesome diarrhea, usually due to errors in the arrangement of the diet. If this is not controlled it will doubtless result seriously.

Too large quantities of roughage or foods containing low carbohydrates and much cellulose, as a rule, bring this about and I find the diarrhea is corrected by giving low fat and protein and the carbohydrates in the form of toast. I also administer an intestinal sedative. To prevent the recurrence of diarrhea, have the daily carbohydrate allowance selected from foods containing a high percentage of carbohydrates.

This intestinal condition is always a source of annoyance, if nothing more, to the patient, and relief from it brings better coöperation by the patient, emphasizing as it does, the importance of the difficult, even tedious, instruction a diabetic must have in order to regulate his diet in such a way as to establish a far better state of health than he has heretofore enjoyed.

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DISCUSSION

Dr. Howard G. Schleiter (Pittsburgh, Pa.): I should like to emphasize the fact that insulin has only been put into general use after the coöperation of a number of clinics in an experimental way, and with the evidence of these clinics as to its properties, its uses and its dangers. There will frequently be temptations to use other and easier preparations, and particularly such as may be given by mouth. Patients will object to the prolonged hypodermic injections, although they are attended with very little inconvenience; but I feel that we should resist the temptation to use such preparations until evidence has come from a sufficient number of reliable sources as to their value or nonvalue.

The use of insulin is not a substitute for careful dietetic management but an adjunct thereto, and the careful study of cases from a dietetic standpoint needs to be emphasized. Insulin should not be used until the patient's tolerance to a diet of estimated value is known; and it is essential in the estimation of such a diet that the nitrogen be kept at a safe minimum and that the fats be not disproportionately high as compared with carbohydrates.

Hospitalization seems an important matter. The stay in the hospital need not be long, but should be long enough to estimate, in the first place, what diet the patient can tolerate without artificial aid; and secondly, having determined the sugar value of the patient's diet and his sugar tolerance, to determine the amount of insulin which he may require. This may take a variable time, for the reason that we cannot always know what amount of insulin will account for a given amount of sugar. But after this is done, the patient is ready to go to his home and have treatment continued there, with occasional laboratory estimations at the hospital or elsewhere. In addition to this, the patient is benefited by the education he receives in the hospital, particularly as to the calculation of his diet.

I have noted occasionally that after patients have received insulin for a certain time and then the insulin is stopped, there is a tendency for the urine to remain sugar free. But we may expect the sugar to return again in periods varying from four to seven days, when it seems necessary either to reduce the diet or resume the insulin.

I think also that after the necessary dose of insulin for a given diet has been determined and the patient goes home, coming for routine urine and blood examinations, there is very little danger of hypoglycemia. The danger of hypoglycemia consists in indiscriminate increase of insulin dosage without a corresponding increase of food intake.

Insulin should not be given in emergencies without an estimation of the blood sugar. Sometimes, where coma has existed for several days, the blood sugar content is already below normal and in such cases insulin would not only be of no avail, but only serve to hasten the patient's end. In these circumstances, it should be given, if at all, in conjunction with carbohydrates.

Dr. Alfred Stengel (Philadelphia, Pa.): The statements which have been made, both by the essayist and Dr. Schleiter, must of course appeal to everybody as reasonable and proper. There is one aspect of the question of insulin treatment that just now interests me more than the question of how we should manage the dosage of this remedy in the hospital care of the patient. That is the general education of the whole profession in the matter of the care of diabetics.

This is a very common disease. It is perfectly certain that a large proportion of the patients, although we might wish it otherwise, will not be admitted to hospitals for preliminary observation and treatment. There is no question of doubt that all patients should be studied in that way if possible, but whether we like it or not, I think there will be many that will not have the advantage of that sort of investigation. It is highly important, therefore, that the profession should not regard the care and treatment of diabetes as a matter that is to be left in the future in the hands of certain special individuals. The whole profession should be prepared to manage this disease.

Mathematics always seems complicated, and I remember well how difficult it all seemed when the matter of infant feeding was first put upon this sort of mathematical basis; yet how readily after a while the whole profession made out milk formulas, a thing which is generally done now. So it is with these diets. It looks complicated and the doctors have been unwilling to take hold of it; but they must take hold of it because this disease must be treated by the family physician. It is important, when possible, that patients should first be in some kind of institution where careful chemical studies can be made and where for a while careful regulation of diet can be practiced so as to get the measure of the case, and also that the patient may receive that education that Dr. Schleiter referred to, and which in my opinion is the most important reason of all for getting the patient into the hospital. But those patients who cannot or will not have such care for a time should nevertheless be treated with some regard to the proper management of the disease.

There is another side to this question, and that is that as insulin becomes more readily available to the profession and to the patients there will be a temptation on the part of some patients, and perhaps pressure will be brought upon the physician, to make insulin the means merely of more liberal feeding. Patients who have perhaps a mild form of diabetes will want to take insulin and indulge their appetite. Fortunately, perhaps, the drug is useful only when given hypodermatically; otherwise I think many mild diabetics who could get along well on regulation of diet and do not need insulin, would probably be using it and indulging their appetite. It is to be hoped that insulin will not be misused and wasted on such cases. There are many mild diabetics who really do not need insulin; the great need is in the severe cases.

In various places accurate instruction is being undertaken now in the matter of the medical treatment of diabetes, and I think there can be no more important thing for county medical societies or groups of physicians than to study this matter of diet. After all, the regulation of diet and the knowledge of the ingredients of different kinds of diets is not so complicated, and I hope that the whole profession will feel it necessary to be prepared to handle these cases and that it will not be regarded as a thing to be relegated to certain individuals, for the reason that the few individuals cannot manage a thing that is of such enormous distribution. The situation is much the same as in the case of nephritis. What would we say if all nephritic patients were obliged to be treated by certain specialists? The profession should prepare itself to meet the special requirements that have been brought into the matter of diabetic treatment by the introduction of this wonderful agent—insulin.

Dr. Henry D. Jump (Philadelphia, Pa.): Dr. Petty did not mention the cases of diabetes that can be handled by the ordinary methods of dietetic care. I wish he would tell us what are the determining factors that lead him to treat a case without insulin, or if he treats them all by that means.

Dr. William E. Robertson (Philadelphia, Pa.): I should like to qualify what Dr. Stengel said on the subject of home treatment of the diabetic only in so far as it applies to the severe types. It is impossible to treat a case of coma at home. Not long since I saw a patient who at twelve o'clock was apparently in normal condition; at two she was profoundly unconscious; at five I saw her, and the whole room was reeking with the odor of acetone. How long this had been going on I do not know, but she died at seven. That case could probably have been saved by very prompt hospitalization.

Another point is that the vast majority of our patients, perhaps 75 per cent, will never need insulin. All the juvenile cases, and comatose and gangrenous cases will need it, but the vast majority of cases will not. It will be necessary to determine the food tolerance of these patients, and every doctor will have to be equipped to determine the individual tolerance. The education of the public along medical lines, can only come about through the doctor, and it is the doctor's privilege and duty so to educate the public. If he does that as far as the diabetics are concerned, among other things he will teach them to examine their own urine, for as long as they take food in sufficient quantities so that sugar will show in the urine, there is always danger. As long as the urine is free there is no danger of any very serious complications. So when a simple test that may be learned in a few months' time is taught to these diabetics, they may remain safe, and that in the vast majority of cases, depends upon the diet—not by any means a fasting diet; it is a sliding scale depending upon the ability of the individual.

The management of diabetes is, and probably will be an individual matter. The doctor must first acquire the simple arithmetic necessary to a proper understanding of the management of diabetes, the importance of basal maintenance diets, individual tolerance, the caloric value of foods, and he must insist on the necessity of weighing foods and expressing them in calories. Manifestly, unless he knows definitely the total available glucose in any diet, he is unable to control his patients medically, nor is he able to determine whether insulin is required or not.

Dr. Henry K. Mohler (Philadelphia, Pa.): The use of insulin is not always productive of the results that many physicians expect to obtain. This is especially true in patients over fifty years of age, who have glycosuria and symptoms due to generalized arteriosclerosis.

Many of the symptoms, in this type of patient, are due to the arteriosclerotic process, but are erroneously ascribed to the glycosuria. The glycosuria, in the majority of instances, is the result of arterial degeneration in the pancreas as part of the generalized arteriosclerosis.

This type of patient is ofttimes readily rendered sugar free and if insulin is required, small doses usually suffice. The symptoms are not due to glycosuria, but to the effects of the arterial degenerative process. Insulin will not benefit arteriosclerotic kidneys, chronic myocardial degeneration and other similar processes.

Some physicians and patients have an erroneous idea of the indications for the use of insulin. Many of our older patients do very well on dietary measures, but are advised by the physician or friends to take the insulin treatment in a hospital.

Keen disappointment is experienced by the patient upon being told by the hospital physician that insulin is not indicated when satisfactory results are obtained from diet regulation. The question asked by Dr. Jump, therefore, is very timely.

It is not considered good practice to use insulin in a patient, otherwise doing well on diet regulation, in order that he may appease a ravenous appetite and consume food in excess of what is needed to maintain him in a very satisfactory physical and mental condition.

Dr. Petty (in closing): In reply to Dr. Jump's question as to the factors determining when insulin should be used, if a patient has diabetes of such a degree of severity that he cannot maintain his energy and efficiency upon dietary measures, he surely needs insulin, and that is the basis upon which we always decide whether or not a patient needs insulin.

In regard to the hospitalization of diabetics for a short period of time, as Dr. Stengel brought out, I do not assert that the diabetes specialist, or the man who pays special attention to diabetes, should be given all the cases or that nobody knows anything about the disease but the specialist; but I do believe and am thoroughly convinced that all of the emergencies of diabetes —the study of the patient and finding out his needs as to food, how much he can take care of, and if he cannot take care of enough to make him efficient, the amount of insulin he requires—are just as important as any surgical operation. I am sure no surgeon to-day advocates that every doctor should do major surgery. The giving of insulin is just as important as a surgical operation and a diabetic should be handled by a man as skillful in diabetes as the general surgeon or special surgeon is in his line.

I personally consider the promiscuous giving of insulin as dangerous as the general practitioner doing surgery. After the patient is standardized and goes home, any physician can take care of him, but the preliminary treatment should be done in a hospital by one trained especially in that work. Remember that insulin has not simplified the treatment of diabetes. It has multiplied its difficulties manyfold, and insulin is as dangerous as any two-edged knife a surgeon ever used.

THE PRACTICE OF SURGERY UNDER THE PENNSYLVANIA COMPENSATION LAW*

LEVER F. STEWART, M.D.†

CLEARFIELD, PA.

Since the Workmen's Compensation Act of 1915 went into effect in the Commonwealth of Pennsylvania it has been my privilege to act in a consulting capacity to various mining companies as well as to several insurance companies carrying mine risks exclusively. In addition I have seen and cared for the usual number of compensation cases received on the surgical service of a general hospital in a community having a considerable number of industries. This experience has embodied an opportunity of seeing the injured's reaction to his injury, his problem before a compensation referee and the compensation board, and the attitude of the surgeon in various sections of the state toward the injured man and the compensation law, and finally the attitude of the hospital in various communities toward the law.

In medical circles a change in the law is demanded with good reason. In the past I believe the physician, through the instrumentation of the Medical Society of the State of Pennsylvania, made sporadic efforts to bring about improvement in the law, especially as it concerns the physician. I believe these efforts have never been the result of a thorough study of the situation as it affected the physician throughout the state, and in this connection would dispose of the subject of changing the compensation law with two suggestions: first, that a commission be appointed by the Medical Society of the State of Pennsylvania to study the law thoroughly with the thought of making a change that will result in better care of injured men and proper recognition of the surgeon in connection with this work.

My second suggestion is that, if acceptable, the recommendations of this commission be endorsed by the State Society, which through its executive representatives should engage men of experience in politics or statesmanship, who then may properly present these suggestions to our Legislature.

The last session of the Legislature defeated amendments designed to clarify and improve the position of the surgeon. Some time will elapse before another opportunity for change in legislation presents itself. In the meantime the surgeon can do much to impress the importance of his function in connection with this work and increase the esteem in which he is held by those most intimately concerned with the compensation law. With no thought of criticism but rather a thought of suggesting ways in which the position of the surgeon or physician can be fortified, I wish to review briefly some of the surgeon's objections to the law, the law's objections to the surgeon, the injured's criticism of the surgeon, the value of rehabilitation surgery and reëducation.

The Compensation Board has ruled that when death takes place in ten days from time of injury, one hundred dollars shall be paid to the dependents of the injured; from this, funeral expenses, and the expenses, both hospital and medical, of this last illness are to be paid. The result is that under the circumstances the hospital rarely and the surgeon practically never is paid. I can see nothing to remedy this condition except a complete change of this part of the law.

There has been much objection to limiting the period of responsibility of the employer for the surgeon's fee to thirty days; whereas, while this leaves much to be desired, it does provide for a fee, where in the past the surgeon usually received nothing. In theory the injured assumes an obligation for medical services rendered after the first thirty days. In practice the injured evades payment.

The Compensation Board has ruled that the employer may select the surgeon for those who are injured in his employ. The injured is not denied the right to select his own surgeon but if he does select his own surgeon, the obligation becomes the injured man's. I believe some surgeons have felt that this was a discrimination against the profession as a whole. Actually I believe this stand is not well taken because it is simply a recognition of the fact that one surgeon has been able to sell his services over the services of the average surgeon in his community. It would not seem that this decision could with propriety be assailed by the profession generally because the problem is essentially one of competition between surgeons. The decision does not deny any surgeon the right to be paid for his services but simply relieves the employer of the necessity of paying for the services of one whom he does not wish to employ.

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* Read before the Section on Surgery of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 2, 1923.

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An interesting controversy has arisen as a result of the ruling by the Compensation Board supported by the Supreme Court of the state, in which the right of a surgeon of the Pottsville Hospital to collect a fee for services to an injured man during the first thirty days following disability, was denied. It is my understanding that the injured person was sent to the hospital, not to the surgeon, and that he automatically came under the service of the chief surgeon. We have throughout the state a number of so-called state miner's hospitals, where surgeons are on a salary that includes their care of all of the injured of the region in which they operate. These hospitals were in operation prior to the enactment of the compensation law. They are few in number and to them the compensation law has made little difference in amount of work. Aside from this relatively small number of physicians it seems to me that the solution of pay to the hospital surgeon for the first thirty days time is easy to remedy locally. In the past I have heard some discussion, especially concerning Philadelphia, about the manifest unfairness of the law to the surgeon. An analysis of these representations has led me to conclude that the condition has been local rather than general and has been the result of lack of coöperation between the hospital and its staff surgeon. Certainly there is something wrong about the relations of the two when the hospital says to a surgeon, "I will take up to $100 to which I am legally entitled and consider that you are entitled to nothing, although the law provides up to $100 for your services." A treaty between hospital and surgeon could be made to mutual advantage.

Generally speaking, throughout the state, hospital surgeons are being paid reasonable fees, by most of the insurance companies, for services rendered. The far-seeing insurance company recognizes the value, to an injured person and indirectly to themselves, of the proper surgical interest in the injured man. As a surgeon is able to show the value of his continued interest and care of the injured man to the insurance company, I am certain there will be less discussion of fees and less inclination on the part of insurance companies to limit their fees to the first thirty days. Figures that I shall quote below will give an idea of my reasoning in this connection.

The hospital surgeon has been denied the right of bringing suit for fees. The surgical service of the Clearfield Hospital is divided between a colleague and myself. Our practice is to have cases assigned by rotation. The service is continuous; but in practically all instances compensation cases come to one or the other staff surgeon on recommendation, by the expressed wish of the injured, or by the recommendation of the family or work's physician, *as* the company's agent. The Clearfield Hospital considers compensation cases to be private cases. On the wards of the Clearfield Hospital a per diem charge of $2.50 is made to part-pay patients. Such patients are not permitted to select their own surgeon; however, there is a charge ranging from $3.25 to $3.75 a day, depending on the per capita per diem cost as estimated by the previous month's experience, made to compensation and private cases who elect to be in the wards. These patients select their surgeons and are supposed to pay them. This condition has come about as a result of experience with the Compensation Law and a demand for private rooms that has exceeded the hospital's private room capacity. With such an arrangement, which is not impossible in any hospital, I am confident the surgeon is in a position to collect through legal process for any service rendered a compensable case during the first thirty days following injury.

Involvement in litigation attending compensation cases has been most obnoxious to the practicing surgeon. Some surgeons have told me they refuse to care in any way for compensation cases. I believe it is impossible for a staff surgeon properly to take this stand. He has a debt to the injured man and to the commonwealth. There must be a way of arriving at the truth and determining liability in these cases. The intelligent surgeon can do much to clear up dispute. A thoughtful surgeon will properly impress on his patients the justice or lack of justice of a proposed claim to such an extent that a mere statement that the condition is or is not a result of natural causes will practically always settle the dispute without his appearing before any of the courts charged with the operation of the law. Far better is it for the surgeon to see the condition and then frankly say to the patient and insurance carrier that in his opinion it is or is not the result of injury; then if it is necessary to go before a referee, defendant and claimant know the opinion of the attending surgeon. The reiteration of his opinion cannot engender ill feeling.

The surgeon must recognize that the law makes a distinction between that which is possible and that which is probable. To any student of medicine it is obvious that rarely can one say anthing is impossible in medicine. Many things occur that we do not understand and therefore cannot say are either possible or impossible. The surgeon, however, is in a position to say that as a result of his teaching, his study and his experience, a certain condition can or cannot be, or is or is not the result of natural causes. The cross questioning of attorneys makes such conduct a bit difficult, but if these principles are adhered to, the work of the referee and Board will not only be made more easy but more just.

Clear, intelligent, practical testimony before referees or Board, dealing with probabilities, is most acceptable to them, and contesting parties are usually willing to pay fees for such service that are commensurate with its value.

It is not unusual for referees of their own volition to recommend further surgical attention to men that have already been treated in hospitals. The value of human salvage as embodied in reconstruction surgery is more impressed on the minds of the referees than on the minds of the average surgeons. Frequently referees refuse to decide cases until they are convinced further improvement cannot be obtained for injured men by further surgery. In most instances, where a mental state exists, I feel that the surgeon has been primarily responsible, because he has neglected in the course of his mechanical administrations to give the mental urge that keeps morale at a high tide and fosters ambition to be up again and going "on his own." Our compensation laws provide a living compensation for the permanently injured that covers a period of approximately ten years. The best interests of the permanently injured person are served by education in some of the less vigorous pursuits that will provide a living wage. A man permitted to be idle for ten years, drawing a small weekly stipend, will be found in worse condition at the end of this time as a result of being coddled and lulled into a false feeling of financial independence than at any time during his disability. If a way to self-support and self-respect has not been shown him during this time, he is lost, and must inevitably become an object of the charity of the state. Unless a comprehensive plan of reëducation for the injured man is enacted before the end of the first ten years of operation of our Compensation Law our state will be overrun by pathetic, worthless, crippled paupers.

From the outside, it would seem that the injured man has a just complaint against the surgeon. However, one seldom hears it voiced. Surgery does not alone involve a mechanical, scientific art, it involves some system of work and essentially an obligation to explain to those seeking or coming under surgical attention, the possibilities of their treatment and the things that must necessarily be done in order to obtain the maximum in results.

It is the duty of the state aid hospitals to serve all of the people in the area in which they operate; therefore the surgeon should never be reluctant to press on the hospital the person in need of attention who is unable to pay. His state in a measure and his community especially, make provision for such treatment. Latterly, as a result of increased per capita per diem cost, hospitals have been more rigid than charitable about the admission of patients that cannot pay. The court ruling concerning sectarian institutions or hospitals aggravated this condition and caused false impressions concerning hospitals in general. I remark these things to show that the injured man who cannot pay for hospital treatment should not be left under the impression that treatment is impossible because he is without funds. This change from a charitable to a mercenary attitude toward the injured man has no doubt been aggravated by the operation of the Compensation Law about which most people have little understanding. There are limitations to the obligation the law imposes. Its obligation is assumed by the employers of labor. Where this obligation ceases and the injured person is unable to pay, our charitable institutions must begin to functionate.

I will show directly where intelligent, continued care of injured men is an economic saving; therefore I would suggest that it becomes the surgeon's duty to his commonwealth to report to its Workmen's Compensation Bureau all cases needing further attention but for some reason or other not getting it. This duty is just as important as that of the medical man who reports communicable diseases. There is just as much economic loss attending the neglect of an injured person who can be improved as there is attending the exposure of people to the contagion of smallpox, diphtheria and other communicable diseases.

Anything that improves an injured person's earning capacity and comfort, not only increases his earning capacity but adds to his economic value in his community; however, in addition, such procedure nets direct money-saving to the insurance carrier or employer. Human salvage pays not only a profit in money, but a profit rich in personal satisfaction. I cannot better show this than by quoting from my annual report to the Pennsylvania Bituminous Mutual Association for the year 1922.

This report was compiled with the aid of the company's actuary and comptroller.

> "During the years 1920, 1921 and 1922 reconstruction surgery was practiced on a total of twenty-three injured men. These were men, mostly long since discharged from hospitals as having gained maximum recovery, roaming around the streets of their villages unable to go to work and apparently ignorant of the possibilities of recovery. I would call particular attention to the distinction between these cases and cases operated on and cured immediately following injury. These twenty-three cases represent what would ordinarily be forgotten, aside from the bimonthly payment of compensation. These cases represented the possible compensation and medical loss of $69,240 if they had not been salvaged. They have actually cost us $29,901.38. The saving here is $39,338.62.
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> "There were two deaths. One death was in a simple hernia and was from embolism. The other was a fractured femur, who died shortly after operation from shock. The operation was performed under difficult attending circumstances. Two deaths in twenty-three cases of this type do not give an accurate estimate of the risk of this work. These are the only deaths your Consulting Surgeon has had in a large series of this type of work done for different individuals and companies and actually represent a mortality rate of less than 1%. These two cases do not properly belong to the class of cases given in this report, as neither was a reconstruction case. However I have considered it wise to include them in order that my figures may include disaster as well as success.
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> "Among the cases operated on there were four involving the saving of a foot, two involving the saving of a hand, seven involving the saving of a leg, six involving the saving of an arm, one involving the saving of an eye and three involving the prevention of general total disability.
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> "The estimate on the saving in these cases is arrived at by deducting from the amount allowed for such losses by law, the actual amount spent in medical and compensation expense in each case. Sixteen of the above cases were bone cases, four involving the transplantation of bone, and one involving the transplantation of soft tissues. The most money spent for hospital expense in any one case was $1,062.71. Even in this case there was an actual saving of $166.28. In only one case an actual loss of $392 is shown. Through an error, agreement for loss of hand was taken. One death showed a loss in excess of $6,000."

I would call particular attention to the fact that the Pennsylvania Bituminous Mutual Association paid not only the hospital bills, but my own fees for this work, done long after the thirty-day period had elapsed. The average saving here was between $1,500 and $2,000, somewhere around $1,700 per case. I have a feeling that if employers or the insurance companies are made to realize the economic value of this work, the time will shortly come when surgeons will be paid reasonable fees for all services done in connection with compensation cases as a result of the proven value of such a policy.

The showing of economic conservation of not only flesh but money offers the greatest field for the surgeon's service, but it should not stop here. In the past, laws such as the one I have been discussing have been sponsored by those of a socialistic tendency. Despite many shortcomings they have been helpful to the physician. It may not be that the physician could have taken up the passage of these laws with propriety; but today he is obligated to urge on the state the necessity of reëducating the partially disabled man. At present we have a Bureau of Reëducation and Rehabilitation that is compelled to operate inefficiently because of a limited appropriation. To complete this work of human salvage Pennsylvania must have a central University of Rehabilitation operating extension branches in various centers throughout the state, where the injured man may go daily by bus over our improved highways or by train, to receive his instruction and then return home at night.

In conclusion I would again stress the importance of thorough study, and then concerted, intelligent action looking toward improvements in our present law; but such action should go hand in hand with legislation that will assure greatest advantage to the injured man, embodying provision for reëducation and reconstruction surgery. Provision for reëducation and reconstruction surgery and even the surgeon's and hospital's fees beyond the thirty-day limit can be financed by the saving reconstruction and reëducation (mental and physical salvage) would make in present compensation rates. It can be shown that money is more profitably spent in paying surgeons, hospitals and reëducation institutions, than in providing weekly stipends to cripples who rapidly become useless to themselves and families.

DISCUSSION

Dr. Jonathan M. Wainwright (Scranton, Pa.): I always like to see this Section pay a little bit of attention to industrial surgery because, after all, in this great industrial commonwealth of ours, we medical men the state over are called upon a thousand times to decide whether a mechanic with a mangled hand or foreign body in his eye, is going to die or whether he is going to be restored to his work in a few days, or whether he is going to be left a permanent charge on the community. We have to decide this a thousand times to once that we have to decide what we are going to do with a gall-bladder. Therefore it is refreshing to see this Section still sticking to this branch of work which concerns the state in almost every sphere of activity that it has.

I cannot discuss very well the points of Dr. Stewart's paper concerning legislation and financial arrangements, but there are one or two things in connection with the care of patients that I should like to emphasize. One very important thing is that our accident wards in our hospitals where these injured men are first brought are not properly equipped. In the first place they are not equipped with emergency x-ray outfits, and most of all, they are not properly manned. The accident case coming into the hospital is generally treated by the youngest intern in the place, and the mechanic with a mangled hand is much more important than the dear old lady who came into the operating room and was treated by the most skillful man for cancer of the breast. They need the best men the hospital and community can provide; but they do not need them any more than the mechanic with a mangled hand pulled out of cogwheels, all chewed up.

Another point Dr. Stewart did not take up so particularly, though he did mention the end results in rehabilitation, is the physical therapy work in connection with the industrial hospitals and the various dispensaries that are actually located in the plants. They are most important, and a great many of the labor problems can be cut in half for each individual case if these patients with broken legs, stiff ankles, stiff knees, stiff hips, etc., are taken early before they are out of bed and started with proper physio-therapy, hydro-therapy, massage, electricity and so on.

It has been a favorite saying of mine for a good many years that the efficiency of a hospital or dispensary, or of ourselves, our offices, or in fact, the efficiency of any medical activity, is in inverse ratio to the number of prescriptions that the institution, or we, give for liniments. I should like you, when you go back, to look over your prescriptions written for liniments during the year and you can charge off just exactly in accordance with that number. Our patients do not go to Osteopaths and Chiropractors and leave us because they want to; they go because they have had a pain in the back and they have used four bottles of our liniments and the pain has not gotten any better and so, naturally, they try the next best thing and that is the Osteopath.

Then there is another wonderfully valuable field, a wonderfully interesting field. I do not know what ought to present a more interesting problem to the surgeon than the possibility of reconstructing a hand that has one or two fingers off, perhaps, or a thumb off, reconstructing it so that it is going to be of some use, so that a man can hold a pencil, or go on with some other useful work.

Dr. Lyle, of New York, read a most important paper at a meeting I attended three or four months ago, but it has not been published yet. However, I hope you will be on the lookout for it and see if you cannot apply the principles in your own work, taking the scores of men who leave our dispensaries without use of the hand, and reconstructing it so that it will be of at least some service.

Dr. John B. Lowman (Johnstown, Pa.): I can hardly let this subject go by without making a few remarks. I am very glad to see the attitude Dr. Stewart has taken in this matter and also to hear the very interesting words of Dr. Wainwright. So far as the compensation part and pay are concerned, I do not think we have anybody to blame but ourselves originally, as you all know that when the Compensation Law was enacted and hearings taking place everybody was represented but the physicians. Therefore, we have to a certain extent been to blame for that part of the law being passed at that time, and as you know, it is much harder to have a law repealed than originally to have it right.

In this state, one of the largest industrial states that we have, you will possibly find that the greater number of persons admitted to the hospitals are the wage earning men to the accident wards. Several years ago there was quite an attempt in this state to bring the hospitals up to the requirements needed for an injured man; yet today if you go to the hospitals of Pennsylvania you will find very few thoroughly equipped to take care of the injured man who is the wage earner and the most important person to take care of properly. I doubt if all of them come up to requirements, although we have made an effort to bring our hospitals up in other ways. This is an important point.

It was said in a meeting in Philadelphia of the American College of Surgeons and some time ago by a man very prominent in the state, that there would not be any use for the industrial surgeon if hospitals in the state were brought up to standard; but they have to have somebody to look after these cases properly. The question of reconstruction, of mechanotherapy, etc., is something that has a great deal to do with the bearing and fate of a hospital. A hospital with which I am connected, now the Bethlehem Steel Company's, originally the Midvale, was built in order to take care of accident cases. This was thoroughly equipped with apparatus for mechanotherapy, physiotherapy, etc., and to a certain extent we endeavored to carry on, since going on meant an amazing difference in the morale of the men. They are not allowed to stand on the streets with everybody gazing on them as cripples, but are taught something to do. I think the time has come when in this great State the hospital must be equipped to take care of this large majority of people.

Dr. Stewart (in closing): I very much appreciate the discussion of the distinguished gentlemen who have spoken, especially on account of their vast experience in this work. My thought was rather to try to bring out forcefully the economic value of properly directed surgery than to dwell on the details of the surgery itself. If this thought takes root it will do three things: first, aid the injured man; second, provide better recognition of the surgeon doing the work; third, reduce the charitable obligations of our commonwealth.

THE IMPORTANCE OF FOCI OF INFECTION IN THE MOUTH FROM A DENTIST'S VIEWPOINT*

L. WALLACE OHL, D.D.S.
PITTSBURGH, PA.

Unquestionably you are all familiar with the works of Drs. Rosenau, Hartzell, Billings and others, which point out conclusively, the detrimental action on the system of the toxic products of foci of infection in the mouth.

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* Read before the General Meeting of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 2, 1923.

It is my desire to report several exceptional cases, which have come under my observation, and to give the history, as near as possible, in the words of the patient.

Case 1

Mr. A., age 47, stated, "I have been consulting one doctor after another for the last six years. I have changed physicians after from nine to twelve months' treatment when no beneficial results were obtained. The routine of examination was almost always the same: blood pressure, pulse rate, respiration rate, blood tests, urinalysis, etc.

"The treatment varied with different doctors, some advising a special diet, so much rest, so much exercise, while others prescribed pills and abominable liquids to be taken internally. I was continually losing weight, dropping from 196 to 142 pounds at this time.

"The doctor who referred me to you, first looked in my mouth and asked me if I suffered toothache. I have always been proud of my teeth, as I have only two small fillings. I told him that in brushing the teeth the gums bleed a little and that several teeth are a little loose, but never ache. He told me that before he could do anything, I must have my mouth cleaned up.

"My physician referred me to a periodontist, who, aften an examination, said the case was beyond treatment. He advised the extraction of all of my teeth but would not definitely state that I would be cured if this were done.

"Naturally, I, not being a good gambler, hesitated. I called my new doctor and asked if there was someone else I might consult. Again I was referred to a periodonist.

"This man insisted that I must have an x-ray examination of the teeth before he could make a definite diagnosis. Having pictures and after using mirrors, illuminating lights, probes, etc., the verdict was the same. So here I am, and may the Lord be with me!"

On examining this case I found thirty-two teeth involved by the worst case of pyorrhea I have ever seen. I extracted the teeth, doing necessary curettement and alvoelotomy.

Three days later the patient reported that he was feeling better generally—"More pep, sleep like a log, and feel rested in the morning." In two weeks he had gained ten pounds.

The dentures were placed in six weeks and the patient reported that he believed he had something to live for, after all. His physician reported rapid improvement and in six months' time the patient weighed 187 pounds.

At this time the patient said, "I never felt better in my life, and I know that I have the best physician in the world."

Case 2

Mr. B., age 32 years, temperature 103 3/5, pulse 124, had large swelling in the mandibular region and neck on the right side. He stated, "I had a bridge placed three months ago. My jaw started to swell twelve days ago, so I went to the dental parlors where the bridge had been made. The dentist painted the swollen area with iodin, and told me I had caught cold in the teeth.

"He instructed me to paint the swollen area with iodin night and morning, and then to report in two days. At this time I was much worse and he called the physician attached to the establishment. The physician gave me some pills with directions, and told me to report daily.

"I continued to do as instructed until four days ago. Was unable to leave home. Called my family physician and he insisted that the swelling be poulticed. Last night my sister insisted that I see her dentist. He referred me to you."

Three loose teeth were removed, necrotic area curetted, evacuated all pus possible and sent the patient to the hospital. Consultation held. Diagnosis septicemia.

The patient had a fair night, temperature dropping to 101 2/5. Afternoon of the next day the patient was much worse, lapsing into unconsciousness and died at four a. m.

Case 3

Miss C., age 35 years, had been confined to bed for two days, running a temperature of 101 to 103, pulse rate accordingly. Case diagnosed as flu by her physician.

Evening of the second day swelling started in the infra-orbital region. Eye swollen shut the next morning.

I incised the abscessed area, evacuated pus, prescribed saline cathartic and ice pack to swollen area. In two days temperature was normal and patient was able to see her own dentist. The tooth was treated and filled. After repeated radiographic examinations at intervals of from three to six months, it is to-day giving normal service, and apparently, void of pathology.

As I have already stated, these are exceptional cases, selected especially to show from a dentist's clinical viewpoint, the importance of foci of infection in the mouth.

Numerous patients, complaining of neuralgia, neuritis, nervous debility, arthritis, etc., present themselves to you for examination and advice. Upon being quizzed as to the condition of the teeth, they report no local trouble and regular visits to their dentist, with the result in many cases that as the examination continues, the mouth is forgotten by both physician and patient.

Any inflammation of gums, overhanging fillings, ill-fitting crown or bridge work should be regarded as suspicious. Many times a thorough superficial examination reveals nothing. On transilluminating, however, we find suspicious areas, which, when rayed, show definite areas of infection.

Many of these infections will respond to proper treatment without surgical interference and should be so treated. Unquestionably many teeth are being extracted unnecessarily, resulting in an additional insult to the injury already there.

To-day we are practicing as far as possible preventive medicine and preventive dentistry as well as curative medicine and restorative dentistry. We, therefore, should be interested in preventing future complications as well as curing the present ones.

Frequently we are asked to make a diagnosis from an x-ray film or plate alone. This is impossible, for we all know that an x-ray examination is most valuable after the pathology has become chronic.

Acute abscesses, gingivitis and acute pericementitis may exist and yet show negative on the film or plates exposed in that particular area.

It is also easy to obtain a film or plate taken of a normal area, which apparently shows a pathologic rarification.

DISCUSSION

Dr. P. V. McParland (Pittsburgh, Pa.): It is perfectly apparent that while this is an interesting paper, it proves very little in this broad and important subject. Focal infection, if it is as important as the physicians seem to think it is (and there is no doubt that it is) should be stressed in papers of this kind and the essayist permitted to have more time for his paper than he is allowed here. It is an important subject, for we know that focal infection has to do with the health of the entire body, but I think there should be more time given for the discussion of this subject. Until we do that I do not see how we can get very far with papers of this kind.

Dr. C. J. Hollister (Harrisburg, Pa.): The Pennsylvania State Department of Health about three years ago, recognizing the relationship of teeth to the general health, put in a dental service, not with the idea of the Department of Health going out and trying to clean up the mouths of the people of the state, but more particularly to call the attention of the people to this important subject. That division has been in existence for about three and a half years, with the idea of teaching Young America how to shoot from the standpoint of dental hygiene.

As you know, much attention has been given in the past few years to the teeth as the cause of general disease. This pendulum has swung a little too far, in my personal opinion. Our friend, Dr. Cotton of New Jersey, tells us great things about the relationship of teeth to mentality, and I believe most of it has a basis in fact. It is quite logical that the dental apparatus be considered vital in a general health program, because it performs the first step in digestion. If that cannot be properly performed due to loss of dental apparatus, or to pathological conditions, the digestive process is thrown out of gear in that particular, which means the overwork of the rest of the digestive apparatus, and eventually a strike on the part of the rest of the human system, and no human body can function 100 per cent if the digestive apparatus is out of order.

One of the Mayo brothers spoke to us not long ago and he said that over 80 per cent of the disease of the human body was directly traceable to the teeth. Osler said there is more human suffering from the teeth than from alcohol. Booker T. Washington said that if the black man can be taught to take care of his teeth they can make a man of him.

The dental hygienist is a young woman specially trained to clean teeth. She does not extract or fill teeth, but her main place is in the schools where she trains the children in habits that they will carry through life. I think that is the best piece of work the Health Board is doing in this state—training children by trying to get school boards to employ these young women who are trained to do this particular kind of work.

The work we are doing is not a fad. It has been in existence for ten years in Bridgeport, Conn., and they have lowered the cost of reëducation about 50 per cent, so it is an economic problem as well as one of health. We are working with the various activities throughout the state, and if we come to your community we ask your coöperation, because the coöperation of the medical profession means so much.

In closing, I want to make the statement for the dental profession that we are not jealous of the medical man's prestige which is due to the long years of service he has rendered to humanity. But we do recognize the fact that we are a part of the healing art and we simply want to join with you to make this world a better place to live, with better people in it.

Dr. Harry W. Albertson (Scranton, Pa.): I want to stress the fact that x-ray machines are being distributed among dentists (and not all dentists are good dentists). Many of these men are able to take pictures and make x-ray diagnoses, but many of them have the x-ray machine and simply take pictures, look at them, and call it a diagnosis.

A man came under my care for a very severe neuritis. He had been going around to different people for six weeks. I was unable to relieve him, but I sent him to his dentist with instructions to have an x-ray taken of his teeth, which had not been done. He had a mouth full of crowns, gold teeth and bridge work and I felt sure there must be some trouble somewhere in the mouth. He reported two days later that the pictures had been taken but the dentist said there was nothing wrong. I did not ask who his dentist was, but continued to treat him. He got no better. At the end of three weeks I asked him who his dentist was, and when he told me it threw a new light on the case. I took him to an x-ray man and had pictures taken and he found abscesses at the roots of three teeth. The day following, these teeth were extracted, with the result that in three weeks the man was much better. His neuritis was relieved.

I want to stress that point, that not every man who has an x-ray machine is capable of making an x-ray diagnosis.

Dr. Ohl (in closing): I appreciate greatly the remarks of Dr. Hollister in bringing out the one phase of this situation which I neglected to cover, and that is the hygienic part. The correct teaching of children as well as adults will prevent many of these conditions that arise.

NERVOUS INDIGESTION*

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Medical language, like our colloquial and literary language, is continually undergoing more or less significant changes. Terms that were current several decades ago are scarcely heard to-day. They have either been replaced by a terminology which more exactly describes the condition in question; or they have been, or should be, discarded because advancing knowledge has demonstrated an erroneous interpretation of the supposed clinical entity to which they were applied. In the latter category may well be placed the term nervous indigestion, an expression much in vogue during the latter part of the nineteenth century and to-day still more or less popular as a convenient diagnosis for indefinite and obscure digestive symptoms which careful investigation almost invariably is able to trace to some organic basis.

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Nervous indigestion as a distinct clinical entity, although mentioned by writers in the early days of the nineteenth century, owes its first definite description to Wilhelm O. Leube, who in 1879 was the first to differentiate between various chronic catarrhal and ulcerative gastric conditions and certain types of gastric disturbances to which he applied the term nervous dyspepsia.[1] The disorder, as he described it, was not referable to any of the then known anatomic changes in the gastro-intestinal tract, but was the expression of a purely nervous gastric disturbance. Normally, according to Leube, a large majority of individuals experience some digestive discomfort after a more or less heavy meal, usually in the form of epigastric fullness, cerebral congestion, lassitude, irritability, fatigue and sleepiness. He ascribes these symptoms, not to the clinical action of the digestive process on the nervous system, but to a direct mechanical irritation affecting the gastric nerves as the act of digestion begins. It is when these physiologic nervous manifestations of digestion are exaggerated without being referable to any particular type of nutrition that they become a fruitful source of complaint, and finally develop a chronic condition, due, primarily to abnormal reaction of the gastric nerves, and secondarily of the entire nervous system. And the cause of this pathologic nervous reaction, he maintained, resides in the gastric nerves and in them only. Motility and secretory activity remain intact. This represents the fundamental distinction from the types of dyspepsia presenting similar nervous symptoms resulting from organic gastric disease and accompanied by nervous symptoms. He found the disease to be rather common, affecting both sexes alike, and marked by a disproportion between the gross subjective symptoms and the objective effects of digestion, and that the stomach emptied itself in seven hours after a test meal, thus excluding any marked disturbance in the motility and chemistry of the stomach. His later studies, however, led him to admit that in some few instances, symptoms of nervous dyspepsia are present even in the fasting stomach. On the other hand, certain other authors, among them Beard, Glax, Richter, Burkhardt, and notably Ewald[2] claimed that nervous indigestion was not an independent circumscribed disease, but a symptom-complex partially based on neurasthenia or hysteria, and even in the absence of such manifestations, still represented the one and only expression of a neurosis. Ewald, while admitting the absence of anatomic changes, nevertheless believed that the gastro-intestinal function does *not* remain intact. Some secretory or mechanical alterations take place in the digestive process which, however, do not lead to pathologic changes in the mucosa or the musculature. Contrary to Leube, he emphasized the fact that the symptoms in nervous dyspepsia are not necessarily dependent on food intake and that even a perfectly normal stomach will not always empty itself in seven hours after a test meal.

Study and discussion of the subject was actively pursued, with the result that in recent times opinions seem to concur that motility and secretory activity of the stomach are disturbed, and may present variations in one and the same individual.

It was only natural that investigators should attempt to find an anatomic basis for the disorder. Thus Glénard[3] (1885) endeavored to show that in a large majority of the cases diagnosed as nervous indigestion, the trouble could be traced to a displacement of the gastro-intestinal viscera or a splanchnoptosis, and found that the symptoms subsided after the application of a suitable support for the viscera and other therapeutic measures. Glénard's theory stimulated the search for other anatomic bases for the gastric disorder. With the advance of medical knowledge and the more exact information derived from the results of surgical operations, it would seem almost inevitable that in practically every case of nervous indigestion (excluding, of course, nervous disease with gastric manifestations) some organic lesion will eventually be found to be responsible for the condition. Indeed, too much emphasis can scarcely be laid on the value of operative surgery in revealing the true nature of so-called nervous indigestion. It is well known that chronic appendicitis (to take a common example) will present symptoms of general gastric derangement without any apparent indication of the true seat of the trouble until appendectomy finally establishes a cure. This is only one of a number of conditions the nature of which we are now able to suspect clinically on the basis of the increased knowledge provided by surgery, and which operation in most instances relieves. But it is not only surgical disease of the gastro-intestinal tract that is masked beneath the diagnosis of nervous indigestion. For while in the series of 100 cases on which this discussion is based 31 were found to be suffering from some lesion of the gastro-intestinal tract, of which 23 were surgical, there were 69 in whom the seat of the disorder was traced to extragastric causes.

The diagnosis of gastro-intestinal disease is divided into four phases: a good history of the case, physical examination, gastric analysis, x-ray examination. The history of the case should include all the postinfectious diseases; also inquiry as to whether or not there is a family history of tuberculosis, cancer or other constitutional diseases.

Of the four phases, the history is the most important. I do not know of any procedure that will give one so much enlightenment or so much insight into the cause of symptoms, as a careful interpretation of a carefully taken history. It is very necessary for the physician to pick from the history the important points, as the patient may have many symptoms, none of which are important. The more one studies gastro-intestinal disease, the more one is impressed with the necessity of a carefully taken history. We should develop a history technique, just as the surgeon develops a surgical technique. The accuracy of a pathologic diagnosis bears a close relation to the accurate clinical history.

The second phase is the physical examination. So much depends on a thorough and complete examination that it is scarcely possible to overestimate its value. Too often failure to make a correct diagnosis can be attributed to failure to spend enough time in examining the patient systematically and thoroughly. If we want to become good diagnosticians we must stick to fundamentals. These are: inspection, palpation, percussion and auscultation. Every doctor can and should possess a stethoscope. I know of no instrument available to every practitioner that is as valuable. The physician who can and does use a stethoscope intelligently and who interprets its findings correctly, possesses an art which is priceless.

The third phase is gastric analysis. The specific purpose of the "test meal" is to determine gastric activity, motor and secretory, and to ascertain the presence of such pathologic products as occult blood, lactic acid, food remnants, pus, etc., the recognition of which may serve as a clue to the type of gastric disorder in a given case.

The fourth phase is x-ray study. Test meals and gastric analysis do not reveal changes in the form, position, contour or mobility of the stomach, nor are they designed to reveal such changes, which rightfully belong to the province of the roentgen ray. On the other hand, since the development of the x-ray, the general practitioner has fallen into a bad habit with regard to his digestive cases. The x-ray is not the last word in the diagnosis in these cases and this fact should be impressed upon the patient, as well as upon the internist. The fluoroscopic study overlooks functional changes, such as hyperacidity, achylia and inflammatory conditions of the mucous membrane, present in the greater number of our digestive cases. It must be remembered that there are more good clinicians than good roentgenologists. I am not, by any means, decrying the use of the roentgen ray in the diagnosis of digestive diseases. In all fairness, I must say that the splendid work of the roentgenologist has been of great value in these cases. What I want to impress upon you is that in digestive cases, a thorough study and correlation of all of the above four methods of examination are essential in arriving at a correct diagnosis.

GASTRIC ULCER

Four cases of gastric ulcer occurred in this series of cases. All of them were females, ranging from 36 to 44 years of age, and the symptoms had extended over a period of about two years. They had the usual signs of indigestion, but the chief complaint was belching and acid regurgitation after meals. They all had slight gnawing epigastric pain occurring one hour after meals, but little attention was paid to the pain, as their attention was all absorbed by the belching. There was no definite food ease. Work and bodily activity aggravated the symptoms. Acid food also added to their discomfort. There was some distress at night but no vomiting. The bowels were constipated in all of the cases, and the stools were positive for occult blood. Physical examination of the chest and heart were negative; temperature was normal. There was slight epigastric pain on palpation above the umbilicus, but no abdominal rigidity. Gastric analyses showed hypersecretion and hyperacidity, highest 2 hours after meals, reaching a total acidity of 96 and of free acidity 62 with blood in each extraction. The patients all swallowed the tube with ease, without retching or vomiting. In these cases the clinical symptoms, together with the positive blood in the extractions (the gastric secretion having been run out by gravity) and the x-ray evidence of slight retention of the motor meal and a small niche in the lesser curvature, led to a diagnosis of gastric ulcer.

All four patients had already diagnosed their cases as "nervous indigestion."

DUODENAL ULCER.

Five cases, four males and one female, were diagnosed as duodenal ulcer. The duration of the complaint was about five years, and in each instance had been previously treated for nervous indigestion. The symptoms were much the same as in gastric ulcer, except that the distress and belching were delayed, reaching their height about three hours after eating. Periodicity of the attacks, with comparative well-being for two or three months between the attacks, was a feature of the duodenal cases.

One man attributed his condition to nervous trouble, because, as he put it, "when he was nervous his stomach hurt him."

Physical examination in these five cases was negative except for a slight rigidity of the right rectus muscle. They were all well nourished individuals and presented no loss of weight.

The results of gastric analysis were almost identical with the gastric ulcer group, except for the absence of blood in all the extractions and fractionations. In these cases of suspected duodenal ulcer, after the patients are tube broken, I always do a duodenal drainage for the purpose of determining the presence of occult blood, which, if present, together with other ulcer symptoms, can be said to be almost pathognomonic of duodenal ulcer. Fluoroscopic examination indicated marked six-hour retention. The contour of the gastric wall was unbroken, there was the typical hyperperistalsis and a constant deformity of the bulb, and slight tenderness on palpation over the duodenum. Two of the cases gave a history of soda relief.

SPLANCHNOPTOSIS

Of seven cases of splanchnoptosis in the series, all were females. This group represents the type of nervous dyspepsia described by Glénard, which by some might be classed as functional disorders. In my opinion, however, this is not a purely nervous dyspepsia. While no organic lesion could be found after a careful examination, yet these cases do not represent a purely neurotic type. I believe that the splanchnoptosis itself is the cause of the dyspeptic condition.

The histories of these cases are almost uniform. The ages of the patients varied from 28 to 34 years. They were all married, and mothers of three or four children. Prior to marriage they had enjoyed good health and good digestion. In each case the trouble began after the birth of the third child. Loss of weight, from 15 to 25 pounds, was noted in all. In fact, they were the type of mother that one sees daily in practice. The symptoms varied, but the outstanding and most troublesome complaint was continual belching of gas, and fullness and distress immediately after eating; the larger the meal the worse the symptoms. The appetite was good at the beginning of the meal, but there was early satiety, followed by a sense of heaviness and weight. At the onset of the disorder the digestion was only occasionally disturbed, but later on the disturbance was constant. It is noteworthy that the digestive symptoms stopped after the patient retired for the night. In other words, the recumbent position and rest relieved the distress. Constipation was a feature of all the cases, strong purgatives being habitually used. Gastric analysis showed low acidity and the absence of blood in all extractions and fractionations, after the patients were tube broken and with the use of the gravity method. The stools also were blood free.

The relation of acidity to the clinical symptoms was unimportant. Analysis showed an excessive amount of mucus, indicating the presence of gastritis, in all the cases. The Wassermann test was negative in all. The fasting stomach was empty and motor tests showed slow evacuation time.

On physical examination the patients all appeared as large, substantially built women, with good, but emaciated bony frame-work. The lungs were entirely negative, the pulse rate normal, and temperature subnormal. Blood pressure was low, but the heart action was good. The pulsations of the abdominal aorta could be distinctly felt. The abdomen was characteristic. Between the ensiform and the umbilicus the abdomen appeared sunken, while below the umbilicus it was very prominent. There was diastasis of the recti. The entire abdomen was flaccid and relaxed. The right kidney was well down, easily palpated and tender in each of the cases. There was no tenderness around the gall-bladder region. From a fluoroscopic standpoint these cases might be diagnosed as dropped or fallen stomach. But I have tried to eliminate this expression from my vocabulary, as I know of no one thing that so irritates and aggravates a patient suffering from digestive disturbance for some time as to be told that he or she has a dropped stomach. I think it the duty of every roentgenologist and physician to try to forget this slogan. We are all well aware that from an x-ray standpoint the position of the stomach in the abdominal cavity is unimportant. It makes little difference where it is or what its shape so long as its muscular tone is good and the intra-abdominal pressure is normal. That is the important item. The cases above described might be classified as *elongated stomach* in which the musculature is at fault—that is, of poor tone, or atonic.

CANCER OF THE STOMACH

In two cases, a diagnosis of gastric cancer was made. One of these had been suffering for six months with indigestion and its various symptoms, but none particularly prominent, except belching. The résumé of this case is as follows:

A man 52 years of age, in active business, gave a history of a mild form of digestive disturbances for the past six months. His family history and previous personal history were negative. He had always been a large eater and prided himself on his good digestion. The one symptom which was characteristic of his disease was a pronounced dislike for meat, although he had a normal appetite for other foods. He occasionally vomited food apparently undigested. He suffered no pain. He was 5′ 9″ tall and weighed 162 lbs. (weight 6 months prior was 185 lbs.). The pulmonary and cardiovascular systems were normal. The abdomen showed slight tenderness in the mid-epigastrium, but no palpable mass. The pupils were normal to light and accommodation. Knee jerks were equal and active. Urine negative. Fasting stomach 20 c.c.; no free HCl; macroscopic blood present. The test meals yielded only 30 c.c. and showed achylia with low pepsin content, pus cells and lactic acid. Mucus much increased and food poorly chymified. Blood positive in the gross. Stools consistently positive for blood over a period of two weeks. Wassermann negative after 4 tests. X-ray examination revealed a defect in the pars media. The pylorus was wide open, as was evident by the rapid emptying of the stomach.

The sudden onset, with positive blood, achylia, lactic acid, much mucus, poor chymification of food, loss of weight, slight epigastric disturbances and continuous positive blood in the stools, plus x-ray findings, made a diagnosis of cancer justifiable.

CANCER OF THE ESOPHAGUS

The following two cases will illustrate the seriousness of early symptoms of beginning grave organic lesions, which were treated lightly by the patient (and I am sorry to say also, by one of our profession):

A farmer, fifty-two years of age, up to April, 1919, had been in good health, and working every day. In April he began to suffer from what he called "nervous indigestion," that is, he had the usual signs of fullness, distension and hiccoughs coming on at any time during the day, some shortness of breath, *bland, not sour regurgitation of food,* constipation and a great deal of belching, and tightness in the chest. The fact that these symptoms were worse at night than during the day, and that he had been worrying a great deal about his son in the army, made him think he was suffering from "nervous indigestion," for which he consulted a physician, who agreed with the diagnosis.

A little later he began to vomit food that was apparently undigested. He had no pain before vomiting, but complained of epigastric discomfort and fullness. A characteristic symptom, almost diagnostic of his condition, was difficulty in swallowing; the food seemed to stick in his throat. Vomiting, which always occurred at night, gave some relief. The reason for this was that his breakfast and midday meal consisted mostly of liquids, while his evening meal contained solids, and it was this meal which gave him the most trouble. When this man presented himself, he still thought he had "nervous indigestion." By this time he had lost considerable weight, pain was frequently present, together with a marked sense of fullness in the substernal region, relieved by vomiting.

Physical examination was negative, except for some emaciation. The urine showed a trace of albumin. On trying to introduce the tube, a resistance was met at the lower end of the esophagus. About six ounces of food were obtained, and saliva and free blood were mixed with the contents, with blood on the end of the tube. It was impossible to get a soft stomach tube into the stomach. The stools were strongly positive for blood. Wassermann was negative. A diagnosis of carcinoma on the lower end of the esophagus was made. Operation was refused and the man died in a short time of starvation.

The other case was seen two years later, in a young woman who had a similar condition, with all the signs of indigestion, and the outstanding feature of the food seeming to stick in the throat. A diagnosis of carcinoma of the lower end of the esophagus was made. She was operated on and lived four months after operation.

GASTRIC ACHYLIA

There were three cases of gastric achylia. The diagnosis of gastric achylia is not very difficult. The main subjective symptom is the gastric disorder, although there is no one symptom that is purely diagnostic of this condition. These three patients had been ill for some time, and were told by their friends that they had "nervous indigestion." One case dated back to a typhoid fever, nearly twenty years ago, during which the patient claimed that her nerves had been shattered and she had suffered from this condition since that time. Physical examination was negative in every respect, and it was not until I used the stomach tube that I was able to arrive at any definite conclusion. A test meal showed complete absence of HCl.

Achylia is found in about 75% of chronic disease of the gall-bladder, in 80% of cancer of the stomach, and is always present in pernicious anemia and in syphilis of the stomach. In these three cases no disease of the gall-bladder could be found, and blood findings gave no evidence of pernicious anemia. The Wassermann was negative and there was no clinical evidence of syphilis. The positive diagnosis of achylia should never depend on one test meal; the fractional method of determining the secretory activity should be used. However, it is most difficult to use this method, because the food is so poorly digested as to make the extractions most difficult.

GALL-BLADDER DISEASE

The diagnosis of gall-bladder disease, particularly the chronic disease, is fraught with many difficulties. The symptoms may be divided into two groups—direct and indirect or suggestive and suspicious. The indirect or suspicious type is usually diagnosed as a gastro-intestinal disturbance; the suggestive or direct type, as colic and jaundice. The history in gall-bladder disease is very important. It is usually a prolonged one, often following pregnancy, a continued fever such as typhoid, or a recurrent tonsillitis; a sedentary life and obesity are also considered causative factors. In many cases one of these predominating features may help in differentiating the symptoms from the many other pathological conditions with similar digestive disturbances. While the suspicious or indirect symptoms of cholecystitis may occur in other abdominal conditions, a few of them are characteristic of gall-bladder disease. The usual signs of indigestion are fullness and weight or pressure in the epigastrium, usually coming on immediately after eating. An early sense of satiety is common, with gas and belching, occurring soon after eating, also nausea. Certain articles of food, such as meats, greasy foods and pastry, always aggravate the symptoms. Another important item is the persistence of symptoms. There seems to be no periodicity, as in ulcer and appendicitis, myocarditis, etc. Unlike most other abdominal conditions, the symptoms are not relieved by purgatives. Vomiting, when present, fails to give the relief it does in other abdominal disorders; it is more continuous, and accompanied by considerable retching. While bile in the vomitus may not be diagnostic of cholecystitis, it must be remembered that the vomiting of bile always indicates peritoneal irritation.

Constipation in chronic gall-bladder disease, is not usually a prominent symptom. The bowels are usually regular in uncomplicated cases. Headache, coated tongue, bad taste in the mouth are common. Pain, if present, is usually referred to the back, the condition being termed phrenic neuralgia. Cardiac symptoms in cholecystitis are usually complained of and nearly always occur during the night.

The following case will illustrate the suspicious or indirect type just outlined: Mrs. H. V———, 46 years of age, had been complaining of almost continuous indigestion in its various forms for at least 10 years. Belching of gas and sour eructations, a sense of fullness and abdominal flatulence immediately after eating, occasional nausea, with faintness and occasional salivation were all evident. Numerous cardiac attacks during the night caused a great deal of worry and anxiety. She had a great deal of pain in the right shoulder blade, aggravated by acute digestive disturbances. Diet and medication failed to give relief. She attributed her condition to diet and change of life. Bromides had been used until the patient developed a typical bromide rash. At no time were there any of the direct or suggestive symptoms of gall-bladder disease—colic or jaundice. A physical examination of this case showed the complexion somewhat muddy, teeth in good condition, tonsils enlarged and ragged. Cardiac and chest conditions negative. Slight tenderness over the gall-bladder region and rigidity of the right rectus. Blood pressure was normal and urine negative for albumin and sugar. No shortness of breath on exertion—no râles in posterior or lower lungs. No edema. No history of vomiting. Tenderness at the right costal margin on deep inspiration, and a tender spot in the back to the right of the vertebral column. Gastric analysis after an Ewald test meal, showed complete achylia with pylorus open and rapid emptying of stomach contents. Achylia is common in chronic gall-bladder disease.

X-ray findings in this disease have, in my experience, been of negative value in illuminating pathologic lesions of the biliary tract. Stones of average density are usually not demonstrated on the plate, and pigmented stones are rarely of sufficient density to be so demonstrated. The outline of the gall-bladder is but rarely seen. But the presence of adhesions in and around the gall-bladder, the duodenum and the pylorus, as demonstrated by the x-ray, are of distinct value in the diagnosis. One other condition on which I place a great deal of dependence is the high transverse stomach, which is always hypertonic; and the hypertonic stomach, in my judgment, is most characteristic of gall-bladder disease.

One cannot pass the subject of diagnosis of gall-bladder disease without referring to the wonderful diagnostic technique which Dr. Lyon has so carefully developed. This technique is especially indicated in the indirect or suspicious case of gall-bladder disease. And it is in these vague cases, where the clinical histories, physical findings and laboratory tests fail to make a positive diagnosis, that the Lyon method, properly carried out in all its details as laid down by the author, will often clear up many obscurities.

Many of these cases can be diagnosed as having biliary-tract disease by an intimate study of the chemistry, cytology, and bacteriology of the duodeno-biliary fluids combined with the history, physical and other laboratory findings.

The value of this method, thus applied, cannot be overestimated. But it is almost impossible for the average practitioner to attempt to use it, unless he is thoroughly familiar with it and maintains a well-equipped laboratory.

INCIPIENT TUBERCULOSIS

The cases of incipient tuberculosis comprise twenty, or one-fifth of the entire series. Each of these cases had been treated for some time, for nervous indigestion. Scarcely any two presented the same symptoms or histories. As far as histories are concerned, it was impossible to arrive at any definite diagnosis, with the exception that one was impressed with the great variety of symptoms presented. That there are no definite early signs or symptoms of incipient tuberculosis cannot be denied. It is easy to make a diagnosis of this condition when the case is far enough advanced to have definite physical signs, together with tuberculosis bacilli in the sputum. The family history in these vague cases is sometimes most helpful. When a patient complains of a vague set of symptoms and when inquiry shows that a parent or some one in the same house, either has tuberculosis or has died of the disease, the evidence is strong that this patient may be suffering from the same condition. A few years ago, a diagnosis of incipient tuberculosis, as a rule, was often overlooked, but to-day we must keep in mind that an early diagnosis of this disease, with few exceptions, means a cure. An early diagnosis, however, does not depend upon just one phase of our diagnostic procedure, but means that a combination of history, physical examination, roentgen ray interpretation and laboratory determination, may be necessary. In one case, the history may play an important rôle, while in another, the physical examination or the roentgenogram, may be the deciding factor.

These twenty cases presented a wide variation of symptoms which were diagnosed as nervous indigestion. In five, a family history of tuberculosis gave me an early clue as to the cause of their symptoms. Six had complained of spitting blood streaked sputum at various times, and were told that this blood came from the throat and was of no consequence. Ten of the entire number, on close questioning, gave a history of a slight cough, which was most annoying in the early morning, but at no time had enough attention been paid to this symptom to mention it during the routine history taking. Fifteen had an afternoon temperaure of 99° F. to 101° F. Pulse 96. Loss of weight, from ten to thirty pounds, was noted in fourteen of the cases. Four complained of night sweats. The appetite in the entire group was variable. Nine were afraid to eat, because of the indigestion, that is, gas, bloating, weight, pressure, fullness and distention, etc., which followed eating. The other eleven had fair appetites, but they likewise complained of a wide variation of symptoms following eating of any kind of food. Constipation was present in sixteen of the number, the pill habit being established. Four had occasional diarrhea. Twelve had been dieted but the symptoms were all aggravated by the diet (this was because the diet was so restricted as not to be palatable). Eighteen complained of being continually tired, a fact brought out by careful inquiry into the history. Fourteen were subject to grippe and colds during the entire winter. Five had had the tonsils removed and two the appendix. Wassermann tests were negative in all. Gastric analysis of this entire group was of little help in arriving at a diagnosis, twelve having hypermotility and hypersecretion, and eight low acidity and poor motility. Blood was absent in all gastric extractions and stools. Blood pressure: cystolic, average 105; diastolic, average 76. Inspection and palpatation were not of great assistance to me.

If muscle spasms and diminished expansion, etc., were present, I was unable to determine them, and I depended entirely on percussion and auscultation. My method of diagnosis of these chest conditions may be open to criticism. I must confess that it is most difficult for me to diagnose these cases in the incipient state. There are, however, a few important points on which I depend. They are as follows:

Tuberculosis attacks the upper lobes and rarely occurs at the base. Any modification of the normal breath sounds and adventitious sounds heard above the third rib anteriorly and the fourth vertebral spine posteriorly, should be considered as a tuberculous process, unless some other lesion can be proved. Pathologic changes occurring at the base of the lungs may be considered nontuberculous, until proved otherwise. Bronchovesicular breathing, impairment of resonance on percussion over the area just mentioned, nearly always indicates tuberculosis. Râles, when present in the above named region, are positive evidence of the disease. This simple procedure, when carefully executed, combined with other clinical data, has been very helpful.

In six cases I was unable to arrive at any positive diagnosis from the physical signs, for there was no one sign or combination of signs which could honestly be attributed to any pathology in the lungs. It was only after a two months' study of temperature, pulse-rate and history, and after several x-ray plates of the lungs, that I was sure I was dealing with a tuberculous process. In these six cases the roentgenogram was the final decisive factor in diagnosis. To summarize the situation: Incipient tuberculosis is a disease with a vague history, with an innumerable number of symptoms, which may or may not definitely include the respiratory tract, and with pulmonary signs often so slight as to escape detection by the most observant physician. Since we have no absolutely definite symptom or signs by which to make a diagnosis of this condition, we are compelled to fall back on our greatest asset—common sense, and good judgment.

TABES

The following case illustrates the beginning of an organic lesion, which if not carefully studied will progress so rapidly as to be beyond help, and like tuberculosis, if diagnosed early may be cured. Early diagnosis also means the prevention of weeks, months and years of suffering.

A man of forty-five years of age had always enjoyed good health and good digestion, until one year ago when he complained of attacks of belching which came on suddenly, and ended suddenly any time during the day. That is, they had no relation to meals. An attack of belching would come on about three hours after meals. The character and amount of food had no relation to this condition. The belching was followed by a short attack of hiccough, and this in turn by sour eructations, heart-burn and periods of nausea. Being a highly sensitive individual, with large business responsibilities, he was under the impression that these attacks were entirely due to some nervous disorder, as they were considerably less in number and severity while on his vacation. He complained of an abnormal sensation in his limbs, saying that he was not sure of himself. In spite of diet and medication this patient was going from bad to worse.

Examination showed him to be very nervous, apprehensive and irritable. Although he had lost ten pounds in weight, he did not have the appearance of a very sick man. But he did have hypersecretion and marked hyperacidity. His appetite was good and bowels were regular. He had a systolic blood pressure of 200 and a diastolic of 120, also a slight cardiac enlargement and a loud, ringing aortic second sound. On close questioning, he admitted having some shortness of breath on exertion, but no edema. Nocturnal urine was 700 c.c. with a very slight trace of albumin and a tendency to a fixed specific gravity. On further examination, it was noted that his pupils were irregular, and showed absolutely no reaction to light or accommodation. Patellar, achilles, tendon and abdominal reflexes were all absent. Blood Wassermann reaction was four plus. Spinal fluid was also positive.

This case presents two definite lesions—nephritis and syphilis. The four plus Wassermann, with the history and physical findings, indicates tabes.

HEART DISEASE OR MYOCARDIAL INSUFFICIENCY

The following brief review of nine cases illustrates in a practical way this group of nervous indigestion. Each had for its underlying cause, a myocardial insufficiency. I realize that the diagnosis of these conditions is also most difficult. The following brief history of one of the nine, who, like the others was under the impression that no organic lesion was responsible for his digestive disturbances, is typical:

The patient was a man, 55 years of age, who, 9 months previous to consulting me, had apparently enjoyed good health and digestion. Without any apparent cause, indigestion, with its various manifestations, then began to annoy him. Being a hard working business man, he attributed his condition to business interests. He had taken only short vacations during his business career. His history showed that he had had a severe typhoid fever at 20 years of age, having been confined to bed for eight weeks, followed by slow convalescence. There was no history of other infectious diseases. He complained a great deal of abdominal bloating (I find abdominal bloating a very prominent symptom in these cardiac cases). He was nervous, irritable, slept poorly and had occasional attacks of shortness of breath, and had been taking cough mixture for months. The physical examination of this man showed that he was well nourished; weight 165 lbs., skin pale, mucous membranes bluish, extremities cold, marked depression. Teeth and tonsils were negative. Examination of the chest showed a slight cardiac enlargement, with aortic second sound somewhat accentuated. Systolic blood pressure was 145 and diastolic 90. Abdomen rather large, with slight tenderness over the liver area and a slight enlargement of the liver. Slight edema of the extremities. The chest posteriorly revealed râles in the posterior and lower lobes of the lungs.

It can be said without fear of contradiction that râles in the posterior or lower lobes of the lungs. when not associated with râles in the upper or anterior lobes, are always due to pulmonary congestion, very rarely to tuberculosis. With the intelligent use of the stethoscope, one can gain a great deal of information as to the heart function by listening to the posterior lobes of the lungs. It is surprising how often one will hear moist râles in this region. It is one of the signs upon which I rely for beginning cardiac failure. Slight edema may or may not be present. Systolic blood pressure averages 140, diastolic 95. It is accepted as a matter of fact that a patient may go on to advanced cardiac disease with little or no edema, although this phenomenon may be hard to explain.

The examination of this man's urine showed a specific gravity varying from 1015 to 1025, with a nocturnal output of 500 c.c. No albumin, sugar, or casts were present. Upon close questioning, the patient admitted a feeling of distress following physical effort, but no pain. His pulse rate was 78 and was irregular.

The cases in this group again well illustrate how the gastro-intestinal tract may produce symptoms for one of its neighboring organs—in this case the heart. The close relationship of the stomach and the upper intestinal tract and the heart, has long been a matter of common knowledge and of diagnostic import to the medical man. In former days the stomach held a place of great importance in our system of clinology and many patients were treated for gastric troubles and indigestion, the real underlying causes of which were never discovered until postmortem. In other words, the first signs of myocardial insufficiency may be the usual signs of indigestion. Heart sounds and murmurs no longer hold the high value in cardiac diagnosis that they formerly did, and the old idea of listening to a heart and pronouncing it normal when no murmurs can be heard, is certainly misleading. In the new cardiology the rhythm of the heart, in its broadest sense (which includes frequency, regularity, and character of its contractions, as indicated by the pulse) is more to be relied upon as to the strength of the myocardium than heart murmurs. The electrocardiograph takes precedence over all other aids in diagnosing heart disorders; but it is impossible for all of us to possess such instruments of precision or even to have access to them. There is no doubt that a cardiograph and other instruments of precision will soon be devised for the detection and recording of cardiac irregularities that will be a part of the physician's clinical equipment. It is hoped that instruments of precision may be so simplified and practical, as to be within reach of all of us. That the diagnosis of heart disorders has developed into a very accurate science cannot be questioned, but the present instruments for accurate diagnosis are not practical for all of us to use.

ANGINA PECTORIS

The eight cases of angina pectoris in the series, showed pain in the chest as a sign of indigestion in men and women beyond middle life. This is quite common. Yet it can be said without contradiction that many cases of early angina are incorrectly diagnosed and treated. There are, however, many conditions, practically speaking, that have precordial pain and many patients become very much alarmed by the presence of pain in this region and seek advice for this symptom. It is only by a thorough study of the history as well as of subjective and objective symptoms, that we can assure ourselves of their relative importance.

These eight cases will illustrate how a serious cardiac condition may be diagnosed and treated as nervous indigestion. The patients were all males, and prided themselves on their fine physique and good health. All of them were well set, of the sturdy muscular type, and somewhat overweight. One is struck by the good physical development of many patients with angina, with an excellent history as to the general health and freedom from minor ailments. The health condition of these cases is so striking, as almost to warrant considering such conditions as etiological factors. I have never seen angina in the weak and frail; it rather attacks the well and sturdy. A résumé of one case illustrates to a certain degree, the history of the other seven:

The patient, fifty years old, 5′ 8″ in height, and 175 lbs. in weight, had always enjoyed the best of health, having lost scarcely any time from his business. But of late he had become nervous and irritable, and trivial affairs seemed to disturb him more than usual. He attributed this condition to his stomach. The first manifestation of this condition came on in a most typical way. For several years he had been riding to his business in his automobile and using the elevator to his office. He had always been a light eater, but smoked considerably. In the evenings, after dinner, which was his heaviest meal, he complained of some bloating and belching. This did not seem significant to him and he attributed his condition to nervousness and treated himself accordingly. After dinner he usually walked upstairs to his den, and it was then that his first pain and distress appeared. This he described as fullness and tightness in his chest. When he reached his room, he would sit down and after belching three or four times, the pain would be entirely relieved, but he felt exhausted and had considerable sweating. This condition continued for several months, with no other symptom during the entire day. His pain on walking upstairs, gradually became worse, so much so that it was necessary to proceed slowly. He attributed it to his evening meal, and gradually cut down his diet. But this apparently had no effect on the pain. The one peculiar thing about his condition was that if, when reaching the top of the stairs he could produce belching, he apparently was relieved. He had tried various forms of purgatives and medicines for his stomach, without avail. His distress grew worse upon exertion, and if exertion continued, pain followed and was not relieved by belching gas. At one time he also had considerable abdominal pain, being awakened several times at night with this distress.

A physical examination showed blood pressure systolic 150 and diastolic 90. Heart, normal area, with clear sounds and only mildly accentuated aortic second. Pulse 76. Radials were only slightly sclerosed; liver slightly enlarged and tender on pressure. Wassermann negative. Urinary findings practically normal.

In this group of eight cases, the ages varied from 50 to 68 years. Each complained of one important symptom—pain in the precordium on exertion; so much so, that when walking on the street, it was often necessary to stop on account of the intensity of the pain, which was almost unbearable. Wassermann reaction in the entire group was negative and there were no clinical signs of syphilis. Whether syphilis is an etiological factor in this type of case is most difficult to prove.

Six of the patients had digestive disturbances and some precordial pain coming on during the night. Belching of gas gave relief and sleep could then be continued. The pain would start in the precordial region and extend up to both sides of the neck and down through the arms, occasionally to the wrists. In this entire group the examination of the heart presented no evidence of valvular disease and scarcely any enlargement. The heart sounds seemed muffled and distant, the second sound less distinct than normal. Blood pressure varied from 160 to 170 systolic, and from 85 to 90 diastolic.

ADDISON'S DISEASE

The patient, a man 29 years of age, unmarried, had enjoyed the best of health and was working every day, up to January, 1922. During this month he complained of indigestion with its various manifestations, particularly belching of gas and occasional vomiting. It was noticed by his family that he was losing interest in his work and complaining of weakness. Home conditions had much to do with this man's complaints. His father had died of tuberculosis and his home life after this time had never been very pleasant. He had diagnosed his case as nervous indigestion, due to the constant strain and irritation. He was irritable, restless and unable to sleep. About six weeks following this, he noticed pigmentation over the entire body, but more marked on the exposed surfaces, as is characteristic of Addison's disease. This was thought due to his occupation as a dyer. He had taken some medication for his nervous condition with poor results. When I first saw him. he had lost some weight and was very weak and apathetic. Temperature and pulse rate were normal. Blood pressure 110/60. Urine normal. Wassermann negative. Gastric analysis showed low acidity and much mucus and a slow emptying stomach. Occult blood negative in all extractions.

This man presented the three cardinal signs of Addison's disease. Weakness and mental apathy, gastrointestinal irritation, and universal pigmentation.

CHRONIC APPENDICITIS

Five of this group who were first diagnosed as nervous indigestion, having failed to respond to treatment, were then diagnosed as chronic appendicitis. The nervous manifestations in these cases, apparently were about the same as in the others. I think, however, that they presented a wider variation of symptoms than any other cases which came under my observation. Each complained of the usual upper and lower abdominal symptoms, either of which may predominate; also of the usual upper abdominal symptoms of gas, bloating, sour eructations, occasional vomiting and nausea, and much belching. The character of the food seemed to have little effect upon the severity of the symptoms. I think this is a common finding in these cases. Each of the patients had been medicated and dieted for some time, but with discouraging results.

Prolonged attacks of indigestion, diagnosed and treated as nervous indigestion, gastritis, duodenal or gastric ulcer, gall-bladder disease and other conditions, and which failed to respond to treatment, cleared up after an appendectomy, the result of an acute attack of appendicitis. Inasmuch as we do not have any positive pronounced clinical symptoms that are characteristic of the chronic disease, it is very necessary to correlate all the symptoms before one is justified in arriving at a positive diagnosis.

A carefully taken history and careful physical examination have in no way been superseded by any of the modern aids, however useful and valuable they may be. Practically every case of chronic appendicitis gives a history of having slight pain or digestive disturbances. This pain may be in either the upper or the lower abdomen. It may simulate gastric ulcer, duodenal ulcer or cholecystitis (with or without stones), renal or pelvic disorders. And ofttimes one exhausts his entire clinical knowledge and finds it impossible to differentiate these conditions. Abdominal distention two or three hours after food with colicy and cramplike pain, apparently due to intestinal gas, are prominent symptoms. Constipation of the spastic variety is common. Pain, or soreness in the abdomen following purgatives is a very prominent symptom, and is usually overlooked. It can well be said that the more difficult it is to determine what causes chronic indigestion, the more likelihood there is that the trouble resides in the appendix. In differentiating indigestion due to a cause other than the appendix. I find digestive disturbances have a definite relation to the character of food. A patient with gastric or duodenal ulcer has symptoms that are always aggravated by the ingestion of sour foods or raw fruits; in gall-bladder cases, meats, pastry and greasy foods aggravate the symptoms. In chronic appendicitis the character of the food makes little impression upon the severity of the symptoms. The physical examination, as described by Dr. Lichty, is so well worded and expresses so clearly the important points that I shall quote it:

"The physical examination should, of course, include a careful examination of the abdomen. Of the greatest significance is persistent tenderness over McBurney's point. This may be definite at one time and indefinite at another. It is best elicited by making firm pressure over McBurney's point while the patient is lying on his back, with the shoulders elevated and the knees partly flexed. An indefinite tenderness may be developed into a more definite sign by making pressure with the index finger over McBurney's point and asking the patient, when he is in the position described above, to extend the right knee, hold the leg rigid and elevated from the bed or examining table. The diseased appendix, thus pinched between the approximating anterior abdominal wall and the rigid belly of the psoas muscles, gives evidence of extreme tenderness. This sign was first suggested by Meltzer and goes by his name. It is a procedure which is, of course, applicable only in subacute or chronic conditions. By inflating the large bowel with air (Bastede's sign) or by exerting pressure downward over the cecum toward Poupart's ligament (Rovsing's sign) pain and tenderness may be produced in the right iliac fossa. Among my cases of chronic appendicitis in which operation was performed, 286 or 70.5 per cent gave a definite Meltzer sign. It is interesting to note that in the 400 cases in which operation was performed, rigidity of the right rectus muscle was present in only three."

These three cases all complained of the usual signs of indigestion. At one time the upper abdominal, and at another time the lower abdominal symptoms would predominate. They had, however, one symptom which I have found very prominent in chronic disease of the appendix: the character and amount of food had little to do with the severity of the symptoms. Each of the cases complained that purgatives aggravated their indigestion and always caused a great deal of abdominal pain and right-sided soreness. The gastric or duodenal contents, by gravity method, and the stools were negative for blood. Physical examination of the chest and upper abdominal region was entirely negative, but there was slight tenderness, rigidity and spasticity in the right lower abdomen.

The roentgen ray in these cases is sometimes very helpful, but a complete clinical study of the upper intestinal tract should always be made. A diagnosis should never be based solely on roentgen ray examination. The clinical side is very essential. The shadow of the appendix can be seen in about 80% of cases. If the appendix is not visualized, roentgen ray examination reveals its probable relation to the tip of the cecum. Tenderness at this point is always suggestive. In the female, one must be careful to differentiate between a disease of the appendix and an inflammation of a fallopian tube or of an ovary or a possible ptosed kidney. The size, shape, relations, and rate of filling and emptying must be made out. Adhesions may be demonstrated by manipulation under the screen or by inflating the bowel. If the appendix cannot be visualized at the first examination, the patient should be examined at hourly intervals. Even where the shadow is not seen, it is often possible to demonstrate adhesions of the cecum and terminal ileum and constant tenderness on palpation over the site usually occupied by the appendix. A retrocecal appendix is very difficult to demonstrate. The appendix should empty when the cecum empties. Marked delay in emptying indicates a pathologic condition.

CONCLUSION

A thorough study of the entire group has convinced me that, in the majority, an organic lesion is the underlying cause, so that cases with a history of prolonged indigestion should be carefully studied, according to the four phases I have laid down.

We must remember that all chronic lesions are small lesions in the beginning. An early diagnosis often means a cure. The more difficult it is to diagnose these vague cases of indigestion, the better the prognosis. In other words, if we save the patients and prevent them from becoming confirmed invalids, we save all.

"Seek and ye shall find."

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DISCUSSION

Dr. Edward J. G. Beardsley (Philadelphia, Pa.): It is a very real privilege and pleasure to open the discussion upon the paper of Dr. Thomas. We have heard an excellent presentation of a subject that practical physicians cannot know too much about.

Could there be named a better test of a physician's knowledge, his training, his ability and his tact than the proper handling and efficient, practical study and treatment of a patient suffering with "nervous indigestion"? In the brief time allowed for each paper Dr. Thomas has made us visualize the importance as well as the complexity of the subject. It is easy to see that the author is particularly equipped both by his interest and training and his study to make a scientifically practical study of the patient who seeks his advice.

How many of us can honestly feel that we are better equipped this year for studying such a common symptom complex as indigestion than we were last year? After hearing this very practical presentation of the difficulties frequently encountered in the study of this supposedly simple and certainly extremely common malady it makes one pause to wonder if it may not frequently be that our inefficient attempts to diagnose and treat such cases without thorough study sometimes causes certain of our patients to seek the aid of the exemplars of the pseudomedical cults.

One thought that was impressed upon me in listening to the paper of Dr. Thomas was that if practitioners of medicine attempt to treat the victims of "nervous indigestion" with pills and powders, without proper and sufficient study of such cases, then the patient is scarcely better off than if he consulted the agents of the cults in sectarian medicine.

We all know how these patients should be examined and the only excuse that is ever offered for not so examining them is that there is not sufficient time thoroughly to investigate each patient that consults us. As a matter of fact the patient that consults us is fully entitled to our time and should have as much of it as is necessary to make a correct diagnosis.

As a result of this paper of Dr. Thomas I shall return to my home with a firm resolve to study the patients who suffer from "indigestion" with more care than I have ever done before.

Dr. Joseph Sailer (Philadelphia, Pa.): I think Dr. Thomas's paper illustrates, in connection with the gastro-intestinal tract particularly, a principle that applies to all forms of disease. I try to teach the students at the University that the very last diagnosis they should ever make to explain some ailment of the body is nervousness. I believe that as we get better acquainted with these things we will find that a simple nervous disturbance is almost the rarest thing that occurs. Any paper that illustrates a principle is a very valuable thing.

This one is valuable also because it calls attention to the methods we have of studying the gastro-intestinal tract. I am pleased that emphasis is laid upon the importance of physical diagnosis. I have had many interesting cases of that kind. One, a young woman, was brought in with a diagnosis of cardiac and gastric disorder. The patient at first had some cardiac disturbance which had grown worse and at the same time had a severe dyspnea and orthopnea at night. Examination of the abdomen revealed an advanced state of pregnancy. That examination had never been made and the diagnosis, made apparently on adequate symptoms, had been completely at fault.

I agree with Dr. Thomas concerning the x-ray in many cases. It is perfectly obvious, as he said, that in some cases we can make a shrewd diagnosis from the history, which is very valuable. In a few cases it is possible to make a diagnosis on physical examination alone. I do not mean that the other methods should be neglected—far from it. Sometimes they illustrate the condition and make the real condition appear plainer than it was. In some conditions, such as the hourglass stomach, the x-ray is very valuable and I do not know of any way of making a diagnosis of achylia without the laboratory examination. The greatest thing is to make a thorough examination, not merely of the abdomen by various methods, but also of all the other systems of the body, when we meet a case of this kind.

MIGRAINE WITH PARTICULAR REFERENCE TO PARALYTIC MANIFESTATIONS*

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Migraine or sick headache in its usual manifestations is so common and so easily recognized that I feel I must make some apology for reopening an old subject. I cannot claim to offer anything essentially new, and yet because my work as a neurologist brings me in contact with the more unusual, severe and atypical manifestations of this protean disease I believe a presentation of what seems to me a fundamental conception of the mechanism of the symptoms may be in order, for it is only in this way that I have been able to interpret certain of the more unusual phenomena. It is wholly unnecessary to detail the symptoms of the ordinary attack or mention the usual variations, but I do want to stress the point that in the vast majority of cases the main symptoms are sensory—partly somatic and partly visceral—and associated with gastro-intestinal disturbance. I desire also to emphasize as of the greatest value in diagnosis, the usual early age of onset, the high incidence of heredity, and the periodicity of attacks of the same or nearly the same character. It is a cardinal and safe rule to doubt or even discard a diagnosis of migraine in headaches appearing for the first time in adult life. I wish also to remind you that in the vast majority of individuals, migraine ceases at the time of the menopause in women or after 45 or 50 in men.

In spite of the fact that migraine has been known for centuries and has attracted intensive study by the best medical minds in all times and all places, some of these investigators themselves victims of the disorder, we must admit the essential cause still remains unknown; and while the symptomatology has been accurately described and enriched, treatment is only symptomatic and usually unsatisfactory and unscientific. If, however, the essential cause or causes are unknown, it is now generally accepted, by neurologists especially, that the mechanism of the attack is through the sympathetics, resulting in a vasomotor disturbance of cerebral vessels. This view originated with the Dubois-Reymond and was contested by such great students as Charcot and Oppenheim, but has through recent years gained almost unanimous support as against a few more fanciful and unscientific theories. Much clinical evidence sustains this idea of a cerebral angiospasm, among which may be mentioned the transient nature of the symptoms, the throbbing character of the pain, the direct observance of vasomotor spasm in the temporal and retinal arteries, and finally the occasional permanent aphasias and hemianopsias following attacks. Further, this view of an essentially sympathetico-vasomotor phenomenon allows us in some measure to understand the relationship of the attacks to eye, nose and throat conditions, to gastro-intestinal and pelvic disorders, to toxemias, psychic strain, and endocrine imbalances. The failure of corrective therapy to bring about constant and dependable results, however, indicates that there must still be something more that has not been discovered. It is sufficient for the purposes of this paper to build my thesis on this conception of an ultimate vasomotor disturbance as a cause of the unusual types of cases I now wish to illustrate.

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Case I: A clerk, 26 years old, with a negative family history for headaches, consulted me because of some transitory attacks of disturbed speech. The last attack occurred four days before and caused himself and wife a great deal of alarm. He said he would notice first a dimness of vision in the right eye which would soon spread to the left eye, and after that great difficulty in speaking. He could not form certain words, would mutilate others, and usually in self-defense to avoid attracting attention would not speak at all, especially if an attack came on in business hours. After one or two hours speech and vision would be normal, but he would experience a definite bitemporal headache without nausea or vomiting for one or two hours, and then feel perfectly well. The first attack occurred at 16, and in ten years he had had five attacks. All were practically similar except on several occasions he had noted a numbness in the right hand.

Comment: This represents a not very unusual type of migraine of the aphasic type. The important diagnostic facts are the earliness of the first attack, the transitoriness of the disability, and the negative organic findings even after a period of more than ten years. Please note also the prominence of the motor phenomena as against the more common sensory, and its occasional association with numbness in the right hand, due to the physiological proximity of the speech center to the hand center in the cerebral cortex.

Case II: A draughtsman, unmarried, aged twenty-six, claimed that when he was sixteen years old he suffered from a sunstroke while walking along a railroad track. H felt a numbness and weakness on one side of the body, followed by severe headache and vomiting, and then a complete recovery in the course of the day. In the ten years following he had about six attacks at long intervals, but because he had had two attacks in a period of two weeks he was referred to me for an opinion. It so happened I was fortunate enough to examine him in the midst of the last attack. He arose that morning feeling perfectly well, but about 6.45 he noted a dimness of vision, followed in one hour by a numbness and weakness of the entire left side of the body which gradually disappeared but was replaced by a terrible splitting headache, which came on as he was waiting for me in my office. On examination I found all the tendon reflexes on the left side distinctly exaggerated, but there was no Babinski toe reflex. Sensation to pain, touch and temperature was definitely blunted on this side, vibration and postural sense normal, and no hemianopsia. I advised him not to be alarmed but to go home and rest out the attack as usual. He said his attacks had always been much the same, but that occasionally the right side was involved instead of the left, and then he would notice some difficulty in speech. As a rule the headache was very severe, associated with vomiting, and he would be prostrated for thirty-six hours.

Comment: This represents a type of case similar to the first but pointing to a more marked focal disturbance of brain function. While sensory phenomena are marked, there is a definite hemiparesis associated with characteristic reflex changes. Some weeks after this attack the patient was seen again, with entirely negative findings on examination. Interesting in this case also is the family history of severe bilious headaches in the father.

Cases such as the two just described are not rarities and yet are seldom seen in ordinary general practice. As the attacks are repeated the patient soon becomes accustomed to them, and as headache is apt to be the most striking symptom, other associated symptoms are very apt to escape study and analysis. Complete recovery from the attack itself is the almost invariable rule, but that this may not be so I wish to present to your attention now.

Case III: A miner's wife, age 57, living in a small mining town near Pittsburgh, was seen by me some time last spring. At that time she was mentally confused and depressed, had dimness of vision, and was greatly prostrated. For years she had suffered from terrible periodic headaches. About two months before I saw her she was visiting in Louisville and had one of her usual headaches, which was followed by a loss of consciousness so prolonged that she was rushed to a hospital, where a provisional diagnosis of apoplexy was made. As the patient gradually completely recovered in the course of a week this diagnosis was discarded. Just what the clinical signs were during this period I do not know. At any rate, shortly after her return home another attack of headache occurred, associated with transient blindness, marked mental confusion and lethargy, and extreme prostration. I saw the patient ten days after the attack began. She was still somewhat confused and vision was not quite normal, although I could not detect any changes in the fundi of either eye. Aside from a somewhat heavy build and some signs of wear and tear in general appearance no abnormal findings were present. The urine was negative and the blood pressure only 150. The husband, however, was much alarmed and lived in dread of the next attack because he frankly believed from his own observations that one of them might kill her. My problem was to give some advice about the prevention of further attacks.

Comment: In this case we have an example of a woman, aged 57, who for years had suffered from ordinary attacks of migraine. Her father and mother had similar attacks. Unfortunately for the patient, her attacks did not cease at the menopause but persisted until almost the sixth decade. While no extended studies of the cardiovascular-renal system were possible, it is not too much to say that a heavy woman at 57, and a miner's wife, was entitled to a degree of arteriosclerosis that could ill withstand the shocks of severe migrainous attacks. At any rate one attack resembled an apoplexy, and a second was only a little behind it, and the family very properly feared the next one. We can only speculate as to what occurred in these two attacks: perhaps a small hemorrhage in a silent area, or a thrombosus, or a prolonged state of cerebral anemia resulting in secondary nutritive changes in brain cells. I advised in this case a dose of luminal every night for a long time. A few days ago I was informed by the attending physician that thus far there had been no other attacks, and aside from some slight disturbance of vision the patient seemed well.

CASE IV: Just about one month ago a married woman, aged 44, in apparently good health, had one of her usual attacks of sick headache. Since the age of twelve she had suffered from periodic headaches, but in the last year they seemed to be decreasing in number, so that in twelve months she had only three attacks. The last attack was exactly like the others, but it was much more severe than usual. She was nauseated and vomited. On the second day she had a convulsion involving chiefly the left side of the body, followed by shock and mental confusion. The attending physicians at the time were suspicious of uremia, but while there was a slight amount of albumin and casts in the urine, the blood pressure and blood metabolism did not support this view. For a week she remained prostrated, dull, with pains in the neck and head, but with no rise in temperature. Seven days after the initial headache, she became unconscious and there was a well-marked hemiplegia involving the left side of the face, the arm and leg. In the course of the day the patient recovered consciousness and when I saw her there had been considerable improvement in the paralysis. Aside from the usual neurological signs of a left-sided hemiplegia the examination was negative. The fundi were normal. Blood pressure 138/90. Heart and lungs negative. A spinal puncture revealed a markedly bloody fluid. The Wassermann was negative and the fluid did not indicate a meningitis. The diagnosis was obviously a cerebral hemorrhage. The next day the patient was again worse, with stupor and a complete paralysis, and on the following day she died of cardiorespiratory collapse of central origin. Necropsy showed a rupture aneurysmal dilatation of the right middle cerebral artery just beyond the internal carotid.

Comment: We have in this case a history of sick headaches for over thirty years, and immediately following a severe attack convulsions developed and later a complete hemiplegia and death. The presence of a bloody spinal fluid made a diagnosis of hemorrhage easy, but although before death the opinion was expressed that the hemorrhage was possibly a complication of the migrainous attack, yet in a woman aged 44, not syphilitic, not arteriosclerotic, we had to assume some weakness or disease of blood vessels to allow of rupture under these circumstances. Gliomatous tumor and aneurysm were thought of. The small ruptured aneurysm found at necropsy would seem to me to complete the evidence.

CONCLUSION: In this discussion of principle and citation of case histories, my purpose has been to emphasize the view that whatever may be the first cause of migraine, the chief effects are experienced by the sympathetics and the vascular system, as a result of which more or less localized cerebral vasomotor spasms occur. Such a view will allow us to interpret the unusual and atypical cases, particularly the paralytic, aphasic and hemianopic phenomena. Fortunately migraine is in the vast majority of instances a benign affection, and yet the literature furnishes many examples of permanent sequelæ, both motor and sensory, a discussion of which has been most ably given by Hunt in a paper read before the American Neurological Association in May, 1915. For reasons unknown to us migraine practically always disappears after 50, but in cases in which it continues into the degenerative period of life, and in any case at any age in which there is vascular disease, attacks of migraine are not free from danger.

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DISCUSSION

DR. WILLIAM H. MERCUR (Pittsburgh, Pa.): In selecting the subject of migraine for his paper, Dr. Wright could hardly have selected a subject which is more fraught with interest for discussion in a medical section. Dr. Wright was probably, in his choice of a subject, influenced by the advice of a celebrated English surgeon, Sir Berkeley G. A. Moynihan, who once remarked, "Physicians are, as a rule, not particularly interested in discussing and hearing papers concerning diseases in which the problems concerning etiology, diagnosis and treatment are practically solved; rather are they interested in those diseases which present many unsolved problems in the field of etiology, diagnosis and treatment." Migraine certainly falls in this class and, although, as Dr. Wright has remarked in his paper, its diagnosis can be made with a certain amount of success, the practical problems unsolved in the etiology, and especially in the successful treatment of migraine, are very great. Again, with a subject so varied in its scope as migraine, Dr. Wright has very wisely limited his remarks solely to cases of migraine accompanied by paralytic manifestations, so I will follow his good example and limit my remarks to the differential diagnosis of this form of migraine from other hemiplegias associated with headache.

Several years ago I was fortunate enough in my hospital service to have at one time in my wards five cases illustrating different varieties of hemiplegia: (1) hemorrhagic hemiplegia; (2) thrombotic hemiplegia; (3) embolic hemiplegia; (4) hysterical hemiplegia, and (5) transient hemiplegia, associated with aphasia, unconsciousness and headache and usually high blood pressure. It is this last form of hemiplegia due to an angiospasm of the cerebral vessels which I think would be most difficult to differentiate from the hemiplegia described by Dr. Wright, particularly as this form first described and commented upon by Dr. William Russell of Edinburgh and Sir William Osler is very apt to be followed later by hemorrhagic hemiplegia. The chief point in the differential diagnosis is the age of the patient, this form being found chiefly associated with arteriosclerotic changes of the arteries and kidneys. Lately, however, so many cases of early arteriosclerosis have been reported that we cannot be entirely guided by the age alone.

In conclusion I would point out to internists and general practitioners that although these cases, owing to their paralytic symptoms, usually, as Dr. Wright has remarked, consult neurologists first, they can, if looked for, be detected by the numbness which accompanies them before real paralysis sets in.

PITTSBURGH ACADEMY OF MEDICINE

ABSTRACTS

THE MEDICAL ASPECT OF THE COMMON COLD

DR. C. B. McABOY

Perhaps the most frequent disease for which the general practitioner is consulted is the common cold. One is impressed with our lack of scientific knowledge, the meagerness of information about the disease and our lack of progress. The popular textbooks on the practice of medicine have very short articles, giving no pathology, merely mentioning etiology and giving very general directions as to treatment, and the methods of treatment suggested are so varied that one questions the effectiveness of any of them. The explanation of our lack of progress is probably that we know most about the diseases which frequently result in death and often very little about diseases which do not end fatally. The economic loss from colds is a matter of no small importance. I have been told that during the past winter in the city offices of one of our largest corporations twenty per cent of the office force was either partially or wholly incapacitated for a period of six weeks. Such a statement is sufficient to indicate the importance of the common cold.

ETIOLOGY

Since Benjamin Franklin questioned the relation of exposure to the production of coryza, the question of its etiology has been under discussion. That a state of confusion exists as to the etiology of acute inflammation of the upper respiratory tract is evident upon the most casual excursion into the literature. It may probably be stated that a cold is the result of the bacterial invasion of the upper respiratory tract and that the agents most commonly concerned in the production of a cold are the filtrable virus of Krause and Foster and a heterogeneous group of pure and mixed infections in all possible combinations, viz., pneumococcus, streptococcus, B. rhinitis, Friedländer's B., B. influenzæ and probably many others.

It is well known that in many persons a cold is always ushered in by an attack of constipation or indigestion. (1) What is the explanation of this sequence? (2) What is the relationship of acidosis to a cold? (3) Are certain types of individuals more susceptible to colds than other types? (4) What influence has fatigue upon taking cold?

While these causes are not sufficient to explain the phenomenon known as a cold, they are of such frequent occurrence that their importance cannot be ignored, at least as contributory or determining factors.

Wide variation in virulence exists both between different organisms and probably from time to time in the same bacterial strain. Some organisms are doubtless capable of exciting infection in epidemic proportions of great virulence, apparently quite independent of accessory factors, others may exist as harmless parasites upon the mucous membrane, causing infections only when the resistance of the host is lowered by some local or general exciting factor. When the evidence is all considered, it would appear that nothing absolutely definite is known about the causes of a common cold, but it would seem logical to assume that an infective agent is the exciting cause.

We have no scientific knowledge of the pathology of a cold, except by analogy with inflammations of other mucous membranes. The course of a cold may be divided into three stages: (1) The onset with local exudation: Limited to the superficial layers of the mucous membrane, with profuse watery discharge and swelling of the mucous membrane. (2) The stage of fever: The bacterial invasion has extended into the deeper layers, transforming a local into a system infection and is accompanied by fever. (3) This is followed in two or three days by a purulent stage when the temperature subsides. The discharge becomes profuse and purulent and the patient is soon suffering from a subacute infection of the mucosa, or infection of some of the sinuses, from which it may require weeks to recover.

PROPHYLAXIS

If we accept the theory that colds are of bacterial origin, it must follow that they are transmitted from person to person. In this connection, the study of five hundred children with colds and five hundred children without colds, disclosed that contacts could be confirmed in the majority of the affected children and is most suggestive.

Several questions arise in considering the prevention of the spread of the infection: (1) When does a person developing a cold become capable of infecting others, and when does the period of infection end? (2) As we all harbor organisms capable of causing cold at all times, are we all carriers? In studying this subject, I find no answer to these questions. It would therefore seem reasonable to try to educate the public that the danger zone during ordinary talking and breathing is five feet, and during coughing and sneezing, ten feet.

Would it not be justifiable for commercial houses to insist on employees suffering from head colds to remain at home or at least to arrange their offices so as to minimize exposure?

Colds are most common during the winter months. At this season, the human animal increases his diet, decreases his exercise and shuts himself up in steam heated buildings, frequently in assembly rooms, street cars, railroad trains and subways with large numbers of people, many of whom have colds. What more favorable conditions could possibly be imagined for the production and dissemination of respiratory infections? The diet in winter should not be increased beyond the needs of the colder season. Indeed, with those of us who live in the cities, no change of diet is necessary.

Regular exercise in the open air should be taken daily at a stated time if possible. The cold bath has much to recommend it. Office buildings and auditoriums should be thoroughly ventilated and not overheated.

Is it possible to abort a cold? It is a common experience for one to have the symptoms of a beginning cold which disappear in a few hours after the administration of Dover's powder, after taking vigorous exercise, or some other method supposed to be of value in stopping a cold. Is this the result of the treatment? Are these cases of protein sensitization, the reaction passing in a few hours? Or is the patient simply mistaken as to his sensations? Regardless of what theory of the etiology of a cold, one may favor, it should be regarded as an acute infectious disease and should be so managed.

It matters little what therapeutic agent is used for the relief of fever, pain and cough, so long as both patient and physician realize that they are dealing with a potentially serious infection. If the profession would adopt this position and instruct their patients that a cold in the head is more than just a running nose, the complications and sequelæ would be less common.

STRANGULATED OBTURATOR HERNIA COEXISTING WITH A STRANGULATED INGUINAL HERNIA

DR. PAUL M. SIEBER

Because of the usual absence of a tumor, obturator hernia has always been misleading; and until recent years, diagnosis was practically never made except in case of strangulation or at autopsy. A majority of the cases of strangulated hernia were diagnosed during the course of operations for intestinal obstruction. In the last few years, not a few cases have been diagnosed before operation and the number of cases reported is increasing each year, so that the condition is no longer considered a rarity. Up to 1923, Watson had collected from the literature 396 cases.

The obturator foramen is closed, except for the upper portion, by the obturator membrane which consists of two layers—the internal and the external membranes. The attachments of these layers is arranged so that they are joined below, but separated above; and it is in this arched space that the hernias may lodge. In the upper and inner portion of the membrane is the obturator canal, which corresponds to a groove on the pubes for the passage of the obturator nerve and vessels. The direction of the canal is inward, downward and forward, its length being about one inch and its diameter one-half inch. The structure of the canal is firm and unyielding and is an important factor in the cause of strangulation in this region. The structures which normally pass through the obturator canal are the nerve, which is usually above and outside, the vein below and inside, with the artery between them. External to the pelvis and beneath the external obturator muscle, the vessels and nerve divide into an internal and external branch. Any of these openings can serve as a hernial passage.

Obturator hernia occurs more frequently in women than in men. This is attributed to the larger pelvis which inclines more obliquely and to the relatively larger size of the obturator foramen in women. Pregnancy is supposed to be an important factor, as it sometimes leaves the parietal peritoneum relaxed. Loss of weight, particularly when it occurs rapidly, causes a shrinkage of the fatty tissue in the obturator canal, thus favoring the entrance of a hernia. Over fifty per cent of the cases reported occurred in individuals over 50 years of age, most of them being very thin, often from recent loss of weight.

A non-strangulated obturator hernia is seldom diagnosed before operation. They produce gastro-intestinal symptoms of constipation, occasional attacks of vomiting and colic, and if on the right side they are not infrequently diagnosed as appendicitis. In some cases, when the sac is large enough it may be palpated.

When present, the swelling is found in a triangle bounded internally by the abductor longus, externally by the femoral artery and above by the ramus of the pubes; that is, in the region where one would expect to find a femoral hernia. If a tumor is present it is best palpated by relaxing the muscles by flexion, adduction and outward rotation of the thigh.

The one most valuable symptom is that of Romberg and is recorded as being present in over 50% of the cases reported. It is more often noticed in the presence of strangulation and the pain is more severe than when the hernia is reducible. This symptom is pain in the region supplied by the obturator nerve and is due to pressure by the sac on the nerve trunk in the canal.

If not treated, the course of a non-strangulated obturator hernia is one of frequent attacks of gastro-intestinal symptoms, and in most cases followed by intermittent attacks of partial obstruction, which tend to become progressively worse, eventually ending in complete strangulation. The strangulation is due to the unyielding nature of the internal opening of the canal and the point of constriction is almost always at the neck of the sac, where it is pinched by the internal obturator membrane. Gangrene of the intestines occurs very early and has been found in over 25% of the cases reported that have come to operation. The symptoms in cases of strangulation are, of course, those of intestinal obstruction, and until recently in most cases have been operated upon for intestinal obstruction of undetermined origin. On account of the early occurrence of gangrene the mortality of strangulated obturator hernia is very high and the prognosis is always grave.

Laparotomy is the question of choice, because it enables the operator to confirm his diagnosis promptly; and permits resecting the intestine in case it is necessary, without making a second incision, which would be required if the obturator route were used. It also permits easier reduction of a non-strangulated hernia and there is less danger of accidental hemorrhage from the obturator vessels.

The case herewith reported presents several interesting features and difficulties in arriving at an accurate diagnosis, owing to the fact that a strangulated right inguinal hernia coexisted with a strangulated right obturator hernia.

Mr. V. G., age 37, was referred in November, 1919, with the history of having a right inguinal hernia for ten years. He had been wearing a truss for the last six years and the hernia had never given him any trouble. He had always been well up to the last year, during which time he lost about 10 pounds in weight. He attributed this to hard work. About eight hours before his admission to the hospital, while taking a bath he noticed that the mass in the right inguinal region could not be reduced, as formerly. During the night he was awakened by severe cramp-like pains in the abdomen and noticed that the inguinal mass had become very tender and increased in size. The abdominal pain was soon followed by vomiting and he called his family physician, who sent him to the hospital after unsuccessful attempts to reduce the mass. Protruding from the right inguinal ring and extending into the neck of the scrotum was a very tender mass about the size of a small lemon. This mass could not be reduced. The opposite ring and scrotal contents were normal. The patient did not complain of any referred pain along the inner side of the thigh and as soon as the case appeared to be a typical one of strangulated inguinal hernia, no further examination was made. He was operated on immediately and an indirect type of sac found. It contained a loop of small bowel with a moderate amount of blood-stained fluid. The bowel was somewhat cyanotic but quickly regained its normal color after dividing the constriction at the neck of the sac. Peristalsis was present in the strangulated loop and there seemed to be no question about the viability of the gut. After examining the loops of bowel proximal and distal to the point of strangulation the gut was returned to the abdominal cavity and the usual repair made.

On seeing the patient the next morning about six hours after operation, the abdomen was moderately distended and he complained of intermittent abdominal pain, stating that it was more severe than before operation. There was no visible peristalsis but it was heard to be very active. The tenderness over the right quadrant remained about the same as before operation but there was now some definite muscle reaction. The use of a rectal tube and enema had no effect on the distention. He had vomited immediately after reacting from the anesthesia and this continued up to the time of his second operation. Although the general condition remained quite good, he presented rather a typical picture of intestinal obstruction. It seemed probable that the condition might be explained by the decrease in or the absence of peristalsis in the small piece of bowel that was returned to the abdomen. However, the distention and vomiting continued and could not be relieved. The leucocytes increased 17,500 and it was quite evident that the patient had an intestinal obstruction. The exact cause of the obstruction was not determined. No bulgings could be seen or felt in any of the usual sites of hernias, and there was no referred pain in the right leg. We felt that perhaps the obstruction might be present in the loop of bowel just proximal to the point of original strangulation.

About twelve hours after the first operation the abdomen was opened through a right rectus incision. A small amount of cloudy, blood-stained fluid was found and the entire small bowel was distended. The loop of small bowel originally strangulated appeared in good condition. Some distance above this point a portion of the small bowel was found to be strangulated through a small opening in the parietal peritoneum. This opening was quite definitely the obturator canal, as the pubic bone formed the anterior wall and the pulsation of the artery could be felt behind and to the outer side of the sac. The constriction was divided anteriorly and a small loop of bowel about 2½ inches long was released. At the point of constriction the bowel was definitely gangrenous. The loop was resected and an anastomosis made. The sac, about three inches long, was inverted with a hemostat and ligated around the base with a purse-string suture. The remaining portion of the sac was then quilted down over the obturator canal. The convalescence after operation was quite stormy for the first three days, after which time it was uneventful. He made a good recovery and was discharged 27 days after his admission.

He is now working as a brakeman, has gained in weight and has had no trouble aside from some constipation. He is apparently well and there is no evidence of recurrence.

SPONTANEOUS RIPS OF THORACIC AORTA, WITH ANEURYSM

DR. deWAYNE G. RICHEY

Apparently spontaneous intimal and medial rips of the aorta, either partial or complete, are rare. Conceivably, if the rip be partial, an aneurysm, usually of the dissecting type, will result; whereas, if the rip involves all of the coats of the aortic wall a rupture ensues.

In the past two years we have been especially fortunate in having an opportunity to observe two closely analogous cases of rips of the aortic wall. Both occurred on the convexity of the ascending limb of the aorta arch, in that region which stands the brunt of the blood current. Both showed an old, healed rip of the intima and inner laminæ of the media. In each instance, from one angle of the old rip, a recent rip had occurred. Both had a saccular aneurysm at the site of mural tearing, with some degree of dissection between the medial layers. In both, the new rips had sharp, knife-like edges, while the old rips had healed by a replacement fibrosis. One occurred in a sixteen-year-old boy who had a definite cardiovascular hypoplasia associated with status thymico-lymphaticus. The other occurred in a hunchback of 35, in whom an acquired anomaly of the aorta obtained by virtue of the aorta following the scoliosed vertebral column sharply to the right. The boy died suddenly as a result of a hemopericardium due to rupture of the aorta, while the man died rapidly due to his aortic lesion, but more particularly, to an associated myocardial degeneration. In both, the aorta, at the site of injury was devoid of demonstrable preëxisting lesions.

The first case, that of the boy of 16, came to autopsy under the coroner's service, having died suddenly while at work. It was known that in the performance of his duties, he had been ascending and descending a ladder. At autopsy, he exhibited many of the evidences of lymphatism—a cream colored, pallid, lusterless skin, soft in consistency and delicate in texture; a slight frame which tended to the female type; a large thymus, weighing 60 gms., and hyperplasia of the mediastinal and mesenteric lymp nodes. There were 100 c.c. of recently clotted blood in the distended pericardial sac. The heart, save for a moderate hypertrophy of the left ventricle, was normal. At the ascending limb of the aorta was a saccular aneurysm, which was directed posteriorly. On the left lateral wall, at a point 2.5 cm. above the aortic valve a linear slit—1 cm. in length—indicated the site of rupture, affording a point of egress for the blood into the pericardial sac. On the intimal aspect, two distant lesions were noted. One (an old, healed rip of intima) began above the right posterior cusp of the aortic valve and extended transversely on the posterior aortic wall for a distance of 5.5 cm. Due to the process of repair, the wall at this area was thickened. Here, also, the overhanging, rounded edge, indicated a beginning dissecting aneurysm which had spontaneously terminated and healed. The other lesion was a more recent one, consisting of a fresh rip of the intima and inner part of the media. This commenced at the left angle of the old tear, extending downward and backward to end 5 mm. above the left posterior cusp of the aortic valve. The sharp, clean edges were undermined. It was this rip which had led to the intrapericardial rupture, the hemopericardium and the sudden death.

The second case, also encountered on the coroner's service, occurred in a hunchback of 35, who fell down in a street car which he had boarded a few moments before, and died shortly after being taken to a neighboring hospital. It was ascertained that his deformity began after a fall in infancy; that he had always enjoyed rather good health; that he drank liquor moderately and that he had survived an attack of lobar pneumonia three months before his death. At autopsy, the skeletal deformity was found to result from a marked right lateral curvature of the vertebral column, which at the level of the seventh cervical turned sharply to the right for a distance of 14 cm., thence downwards and slightly forwards for 10 cm. and then to the left and still forwards for 14 cm., to return to the midline at the sacrum. The shortest distance between the seventh cervical vertebra and the sacrum was only 12 cm. As a result of this deformity the right pleural cavity was almost obliterated, while the left was much larger than normal. The aorta, instead of curving gracefully to the left, turned abruptly to the right, following the distorted vertebral column, so that an anatomical and no doubt a functional diminution in caliber of the aorta occurred at the beginning of the transverse arch. At the convexity of the aortic wall was a small, saccular aneurysm, 4x1 cm. It was intact, and when opened, two slits of the inner layers of the tube were seen. At a level 1.8 cm. above the aortic ring was a recent transverse rip with sharp, keen edges. This slit occurred on the right posterior wall and measured 3.7 cm. in length. This rip led into the aneurysmal sac and its razor-like edges were undermined for a distance of 1.5 cm. At a point 2.5 cm. from the right extremity of the acute slit was another rip which extended downwards for 1.7 cm. This rip was wedge-shaped, with the apex directed downwards. The base was 1 cm. in width, and throughout was white, lightly corrugated and of a fibrous character. This appearance, with the shallow, rounded edges, indicated an old split of the inner layers of the aortic wall which had healed.

It is the impression that in both cases reported, the old intima and medial tears, which later healed, followed a sudden increase in intra-arterial tension; that in the boy, the aorta was hypoplastic, associated with status lymphaticus, which was a contributing cause, while in the hunchback the acquired anomaly, as well as a beginning arteriosclerotic process, operated as weakening factors; and that the recent tears also occurred as a result of a sudden increase in blood pressure. In the boy, the recent tear progressed through the aortic wall, causing the rupture, and the fatal hemopericardium, while in the man, death ensued before the rupture had been consummated, being hastened, in all probability, by the concomitant weakened myocardium.

SURGICAL TREATMENT OF LUDWIG'S ANGINA.

DR. JAMES A. LINDSAY

Ludwig gave as the diagnostic features of this condition:

1. Slight inflammation of throat which disappears after a day or two.
2. A wood-like condition of the connective tissue of the neck which does not pit on pressure.
3. A hard swelling under the tongue with a bolster-like swelling around the interior of the lower jaw, of a deep red or bluish red color.
4. A uniform spread of this induration in such a way that is always sharply bordered by a zone of entirely unaffected cellular tissue.
5. Escape of the glands, although the disease attacks their cellular tissue surroundings, and may even commence therein.

All subsequent writers agree as to the first four features but differ as to the fifth. As case after case was reported, various names were given that were explanatory of the views of different writers as to the nature of the affection. Cammerer in 1838 was the first to call it Angina Ludovici. A modern definition from the clinical side and one given by an American author is that of Gerster; namely, a phlegmonous destruction of the submaxillary gland characterized by alarming and extensive edema caused by the unyielding character of the fascial envelope of the gland, which edema is most manifest on the floor of the mouth.

It will be noted that the modern definitions limit the inflammatory focus to the submaxillary gland. The most common primary focus in cases reported has been carious teeth. Wounds of the mucous membrane of the pharynx, otitis media, and tonsillar abscess have been given as primary foci. Mild sore throat has been the only preliminary symptom in some cases. It has appeared as a terminal and death-determining factor in scarlet fever and typhus.

Symptoms: The onset may be rapid or slow. The local symptoms present the following diagnostic points: (a) Wood-like induration of affected parts, sharply defined. (b) The thrusting forward and upward of the tongue by the accumulating inflammatory products and edema; that is, the floor of the mouth is raised and hard. (c) The neck (usually one side) presents all the classical symptoms of phlegmon. We may have swelling of face and neck from malar bone to clavicle. Tenderness is present on pressure directly over the gland. There is marked salivation. We may have 16 to 20 ounces dribble from the mouth in 24 hours. The general symptoms are those of profound toxemia, fever, sweats, frequent delirium, marked prostration and coma. The rapid involvement of the pharynx and larynx in the inflammatory process results in great difficulty in opening the mouth, swallowing, breathing and talking.

Personal experience with this condition is limited to three cases, during service at Camp Hospital 52.

The preparatory treatment in these cases consisted of glucose soda-solution intravenously and saline hypodermoclysis to overcome the severe dehydration in these cases. Full doses of morphin and atropin. Under novocain local anesthesia by liberal incision, parallel and just below the ramus of the jaw, the submaxillary gland was exposed. Its fascial covering was opened and by sharp dissection the gland was excised. No packing or drainage material was used. The wide open wound was covered by liberal dressings of gauze saturated with glycerine. The cervical and sublingual edema readily subsided with marked relief of the angina and improvement in the patient's general condition. All three patients made a good recovery. We felt the recovery of these patients was due, first to the free preliminary hydration; second, to the removal of the submaxillary gland, the inflammatory center; third, to the wide open drainage of all the fascial planes and the gland duct resulting from the removal of the gland.

OCULAR DISTURBANCES OCCURRING DURING PREGNANCY AND PUERPERIUM

DR. E. A. WEISSER

From experience we know these eye disturbances may arise early or late. In any event it is to be remembered that if the patient complains of any disturbances of vision an ophthalmological examination ought to be made as quickly as possible. In uremia eye ground examinations should also be made immediately.

The external ocular diseases most frequently seen during pregnancy are ulcers of the cornea, keratitis, neuroparalytica in delicate women, conical corneas, subjunctival hemorrhages, excessive tearing of eyes due to enlargement of the lacrymal gland and strabismus due to some preëxisting disturbance of muscle balance, diseases within the eye, such as paralysis of accommodation, diseases of the iris and ciliary body, and vitreous changes which occur now and then.

Of the fundus changes described as a complication of pregnancy, retinitis is by far the most common disturbance and equally important because of disastrous effect on vision due to hemorrhages, exudates and degenerative changes that are likely to follow this retinitis.

This retinitis of pregnancy is not a true inflammation, as in albuminuric retinitis, though it is true we may see an albuminuric retinitis occurring during pregnancy from a preëxisting chronic nephritis.

The ophthalmoscopic pictures of the two are not widely different, except that in the pregnancy retinitis, there is usually involvement of the optic nerve and more hemorrhage and exudation in the retina.

Detachments of retina have been seen as a complication of pregnancy and puerperium. Embolism of central retinal artery has likewise been described.

All forms of hysterical vision in pregnant women are seen. These usually occur very early and fortunately disappear later in the pregnancy. Here too we must be certain that no pathology of the eye exists before diagnosing the case hysteria.

Prognosis for vision, as far as the retinitis of pregnancy is concerned, depends upon the location of the lesion in the retina and likewise the duration of the gestation. Some authors on the subject recommend premature labor in all cases of retinitis, others only if the retinal symptoms are severe.

TRAUMATIC ASPHYXIA

DR. W. B. McKENNA

The term, traumatic asphyxia, suggests a striking clinical picture. It is a condition produced by violent compression of the thorax or upper abdomen or both.

The characteristic lesion from which the condition derives its name is from the discoloration of the face and neck. All the cases described in the literature exhibit to a marked degree a deep blue, violet-blue or bluish-black discoloration of the face and neck. On first examination this discoloration or cyanosis appears uniform, but closer inspection, when made, has shown in the majority of instances that the bluish-black ground is studded with minute ecchymotic spots or petechial hemorrhages.

The discoloration is usually most marked about the lids, lips and nose, and less marked about the ears and neck. It may involve the scalp within the hair line and extend to but not within the hair line. In some instances the discoloration has involved the mucous membrane of the mouth, but more commonly the mucous membrane of the mouth, the tongue, the faucial pillars, the auditory meatuses and ear drums have been marked by small punctiform hemorrhages. While this discoloration has in the majority of cases involved the face and neck, it has extended downward upon the upper thorax as far as the nipples; upon the upper arm as far as the insertion of the deltoid; and upon the back of the lower border of the scapula. Here, however, the discoloration has never been so deep as upon the face and neck and usually has been irregular, being interrupted by streaks of normal-appearing skin.

The discoloration begins to disappear usually on the second or fourth day, and has quite disappeared within two weeks. The color appears, simply to fade, and does not exhibit chromatic changes seen following the usual subcutaneous hemorrhage. This observation, repeatedly verified, suggests that the coloration (presumed by some to be due to extravasation of the blood into the tissues), is due rather to a marked venous stasis.

Unconsciousness is specifically noted to have occurred in 44 of the cases. In the vast majority of the cases it has been of very short duration. Associated fracture of the skull has not been noted nor any symptoms to indicate pressure from an intracranial hemorrhage.

We must remember that in this type of asphyxia we are not only dealing with the withholding of air from the lungs, but that the venous blood in the large veins of the thorax, head and neck has been forced back and into the capillaries of the skin by compression of the chest and abdomen, thus producing an intense discoloration of the skin. Perthes explains the sharp limitation of this discoloration by lack of competent valves in the veins of the head. There are no valves in the innominate and internal jugular veins, except a pair where the jugular enters the innominate; these are irregular and incompetent. There are two pairs in the external jugular—one at its junction with the subclavian, and the other just above the clavicle. Both sets of valves are incompetent.

It remained for Beech and Cobb to show conclusively in their studies that it was not an extravasation of the blood outside of the vessels, but that the intense pressure from the blow had forced the venous blood upward against the incompetent valves and backward into the capillaries of the face and neck. This they prove beyond question by removing sections of skin for microscopic study.

The symptoms frequently accompanying the condition are unconsciousness, brief or prolonged; respiratory or cardiac depression, pulmonary engorgement associated with râles and bloody expectoration. Convulsions are not uncommon and occur not only with resumption of consciousness but during several days following.

Aside from the usual methods of combating shock, the treatment is mostly symptomatic, and consists of the use of stimulation, applications of oxygen and artificial respiration.

FURUNCULOSIS OF THE EXTERNAL AUDITORY CANAL

DR. CHARLES C. STANTON

ETIOLOGY

The classification of the etiology may consist of four divisions: 1, the external or mechanical; 2, the internal or aural; 3, the general or constitutional; 4, the reflex or trophoneurotic.

The external or mechanical form of infection is the most common, and is caused by scratching, probing or traumatic cleaning of the ear during the removal of cerumen or foreign bodies by instrumentation or irrigation. The internal or aural form is next in importance, and is caused by a preëxisting middle ear suppuration or infected chronic eczema. The general or constitutional form is relatively uncommon, and as a rule it acts as a predisposing factor.

Dench reports two cases of his own, one in which a boy had a severe traumatic furunculosis of one ear, and though he was in excellent general physical condition, an abscess developed in exactly the same location in the canal of the other ear. In the other case, the abscess in one meatus was followed within twenty-four hours, by an exactly similar condition, in the same location of the meatus of the opposite side. Because of the identity of the locality of these abscesses, and the absence of any other exciting cause, he places these furuncles in the reflex trophoneurotic group.

SYMPTOMATOLOGY

The symptoms of furunculosis of the meatus are divided into an early or exudative and a later or suppurative stage. The pain varies according to the depth of the inflammation. Should the infection start in the region of the perichondrium, it is initiated by an ever increasing throbbing, tearing pain, most severe in character, radiating from the ear and extending over the side of the head and face. When only the superficial layers of the skin are involved, there is usually little or no pain. The exudative stage may determine in resolution, or after a variable time, usually four or five days, depending on the thickness of the overlying structures, the tissues softened, and break down with pus formation. The earliest symptoms are elicited in washing the face, followed by fullness, tinnitus and tenderness on moving the auricle. Mastication, tenderness over the mastoid or parotid gland, protrusion of the ear away from the head, edema over the mastoid and redness or purplish discoloration of the skin in front of the tragus. In infants and young children the subjective symptoms are of course not to be obtained, and the diagnosis is consequently difficult. The intensity and the frequency of the symptoms are dependent upon the locality and the size of the furuncle.

DIFFERENTIAL DIAGNOSIS

The differential diagnosis of furunculosis of the external ear canal is between exostosis, granulations of external meatus, aural polyp, perichondritis of the auricle, carious teeth, parotid abscess and mastoiditis.

An exostosis is a bony prominence, hard to the touch, and usually not sensitive, whereas a furuncle is usually not so hard and very sensitive. Granulations are not painful and give a history of long duration, whereas a furuncle is an acute process. A polypus is freely movable and not tender, whereas a furuncle is not movable and very tender. Perichondritis is a diffuse process, which may involve the entire auricle, whereas a furuncle is a circumscribed process found in the canal proper and does not extend to the auricle. Carious teeth are readily differentiated by the absence of any aural tumefaction and the presence of tender teeth. Parotid abscess shows a tender swelling over the parotid gland primarily, and the pain radiates into the ear canal. The most important differential diagnosis is between mastoiditis and furunculosis, which is as follows:

FURUNCULOSIS	MASTOIDITIS
History	
1. Former attacks common.	1. Former attacks unusual.
2. History of mechanical irritation.	2. No mechanical irritation.
3. Onset rapid.	3. Onset gradual.
4. Height of disease at third day.	4. Disease begins usually three weeks after an acute purulent otitis media.
5. May or may not be associated with an acute purulent otitis media.	5. Usually associated with acute purulent otitis media.
Subjective Symptoms	
1. Pain is greater than in mastoiditis.	1. Pain is less than in furunculosis.
2. Tender spots in canal.	2. No tender spots in canal.
3. More crying on insertion of speculum due to passage over furuncle.	3. No crying at insertion of speculum except from fear.
4. Pain on irrigation.	4. No pain on irrigation.
5. Pain over parotid (in furuncles of anterior wall).	5. No pain over parotid.
6. Pain on mastication.	6. No pain on mastication.
7. Hearing normal or diminished, according to size of furuncle.	7. Marked deafness.
Objective Symptoms	
1. Canal narrow at orifice.	1. Canal narrow at fundus.
2. Tumefaction in external cartilaginous canal.	2. Tumefaction in internal osseous canal.
3. One or more tumefactions.	3. One tumefaction.
4. Discharge slight.	4. Discharge usually free.
5. Tumefaction usually on posterior inferior wall or on the anterior wall.	5. Tumefaction on the posterior superior wall.
6. Auricle sensitive to touch.	6. Auricle not sensitive to touch.
7. Auricle displaced forward.	7. Auricle displaced forward and downward.
8. Edema over mastoid, but no bone tenderness.	8. Edema and bone tenderness.
9. Tympanic membrane not perforated.	9. Tympanic membrane perforated and discharging.
10. Tympanic membrane may be normal or slightly congested.	10. Tympanic membrane shows signs of acute purulent otitis media.

TREATMENT

In the very early stage, with pain and tenderness in the ear canal and no tumefaction elicited, relief and often subsidence of the furuncle can be accomplished by wool tampons saturated with a 25% to 50% ichthyol in glycerine, applied hot and reapplied every six to twelve hours, with heat applied externally. In event of tumefaction, early free incision involving the perichondrium should be done under gas-oxygen to insure free drainage. Any case of furunculosis deviating from the ordinary course, i. e., as involving surrounding structures, simulating a mastoiditis or a parotiditis, should be a hospital case for observation.

HOSPITAL CONTROL OF SURGEONS

Laymen may not in the past have given the matter very much thought, but among surgeons who have risen to the higher ranks of their profession there have been those who have demanded that surgeons be brought under control and accountability like men in other professions. An obstacle that has always been in the way of bringing about such control has been the blind trust of the layman in surgeons and doctors. Americans have been strangely willing to have operations performed on themselves or their kindred without any assurance that proper or reasonable safeguards were employed.

In *Harper's* for February, Mr. William G. Shepherd tells us that as a result of efforts among the surgeons themselves during the past six years there is to-day no profession in the country which is under as close self-scrutiny as surgery:

> The surgeon who cuts you or me to-day is not an independent agent who can hide from his fellows as well as from his helpless trusting patient, the kinks in his mind or in his character. He is under a white light. He is no longer protected by your or my willingness to look on him as almost a superman. And this is how the change is coming about:
>
> In the old days—and that is not more than a dozen years ago—the procedure of an operation was something like this:
>
> Your physician agreed with you that something was the matter with you inside, and that something ought to be done about it. He made his diagnosis as best he could, summoning all his own knowledge to his aid, and then, perhaps, after consultations with other physicians, suggested an operation. Perhaps he told you he would perform the operation himself, or he might have referred you to a surgeon. You were taken off to a hospital—and please note that operations are always performed at hospitals—put in condition for the adventure, taken to the operating room, put to sleep, and came through the ordeal very well, perhaps with great benefit to yourself. You recovered, paid the bill, and felt grateful to everyone concerned. You left the hospital, thanking everybody. You will remember the hospital and the good people in it, the orderlies, ward doctors, nurses and all, for the rest of your life. But —and herein lies all the evils of the old system of surgery—the hospital forgot you.

How has this change come about? The surgeons who took the lead in the movement were men of vision, and these are some of the things that they saw:

> The surgeon exists for the benefit of the people, not people for the benefit of the surgeon.
>
> Unnecessary operations, even when performed with a high order of technical ability, are the bane of present-day surgery.
>
> Surgery must be sterilized morally.
>
> Physicians were splitting fees with surgeons. Doctors were sending their patients to surgeons for operations and were receiving money back, secretly, from the surgeon.
>
> "The impression gained by our hospital visitors"—this is from a statement made to a gathering of several hundred American and Canadian surgeons by an expert hospital investigator—"is that the practice of fee-division is present to some extent in nearly every state and province, even though it may be practically unknown in some sections."
>
> How to control surgeons became the growing question among doctors and surgeons.
>
> For many years this question remained unanswered and surgery continued as unsterile as a diphtheria culture. And then some one got this idea:
>
> Surgeons operate in hospitals. The place to control surgeons is in the hospital. Let the surgeon-controlled hospital control surgeons.
>
> And it is by this method that the control of surgeons is being effected in the United States to-day.
>
> A dozen years ago in Boston at a meeting of surgeons it was suggested that there were two kinds of hospitals in the United States: one kind which was a sort of boarding house for ill people, with a private room in which a surgeon could do to his patients whatever he pleased; a second kind which accepted the responsibility for its patients and their welfare and tried to keep track of whether it as an institution was helping or hurting people.
>
> It is the second kind of hospital that is coming to the front in the United States to-day.
>
> The first kind is being driven out of existence just as rapidly as a great army of surgeons and physicians can persuade the public that it must go.

The question of fee-splitting is discussed by an official bulletin of the American College of Surgeons in the following pointed paragraphs:

> The division of fees, or fee-splitting, is the buying and selling of patients.
>
> The practice exists in various forms, but the most usual form is as follows: A general practitioner makes a diagnosis in which surgical interference is indicated. He then refers the patient to a surgeon for operation. The surgeon operates, collects a fee and sends to the physician one-third or one-half the fee, the transactions being unknown to the patient. Sometimes the physician collects the fee "for the surgeon" and retains his percentage, as agreed with the surgeon.
>
> Sometimes the fee is divided, with the explanation to the patient that the physician "assists the surgeon" and gives the anesthetic. In many such cases the explanation is a subterfuge for fee-splitting. A competent surgeon usually has a regular assistant and an anesthetist with whom he is accustomed to work, and is more able in this way to do good work than if he permits each referring doctor to assist him.
>
> Undoubtedly the physician should be paid for the study and diagnosis of a surgical case. But he should be paid directly by the patient. In the same way the surgeon should be paid directly by the patient. But the accounts of the physician and the surgeon should not be confused or rendered to the patient as a single statement.
>
> The evils of fee-splitting are, first, that it makes for incompetent surgery. The surgeon who is a party to the practice gets his cases usually not upon the basis of merit but upon the basis of the percentage of fees collected that he will give to practitioners.
>
> Second (this merciless bulletin continues), fee-splitting makes for unnecessary surgical operations. Under the fee-splitting system surgery becomes a commercial enterprise and not a professional service. Both the physician and the surgeon tend to make surgical diagnoses without adequate study, and the result is unnecessary surgery. Much of the unnecessary surgery of our present day is due directly to fee-splitting.
>
> Third, fee-splitting, by introducing dishonesty into medical practice, lowers the entire medical profession in the estimate of the public. The fee-splitter, for example, says to his patient that he refers him to the most competent surgeon, when he knows well enough that if he, the physician, were to be operated upon he would select another surgeon. Further, the fee-splitter usually poses before his patients as having received little or no fee for his services, when, as a matter of fact, he has received a large fee indirectly from the patient. He holds such a fee really as a theft.—From *American Review of Reviews,* March, 1924.

SOME OF THE GOOD POINTS IN THE REPORT OF THE EDITOR, CHARLES J. WHALEN, M.D., OF THE ILLINOIS MEDICAL JOURNAL

Vol. XVI, No. 1. July, 1924

The *Journal* urges organization of doctors as an effective bulwark against political chicanery tending to debauch the rights of the profession, and to demonstrate again that in "Union there is strength" as well as that in the ballot box lies the remedy for malicious and devastating oppression. The *Journal* urges a lay education campaign so as to fight with their own fire the cheap but efficacious and well-paid for methods of charlatans whose broadcast misinformation of the public is a direct assault upon the public health. The *Journal* fights the socialization of medicine and points to Germany and Russia as shining examples of what those systems can do in the way of social, moral and physical destruction. The *Journal* urges the participation in every dignified, pointed endeavor to place the medical profession in its true light before the general public whose interests are served by medicine as by no other human agency. As the telephone has been a first aid to medical protection, and the automobile, so too, may the radio be enlisted in the cause of ethical medical propaganda. Glancing back from the realm of possibilities to that of accomplishment what has the *Journal* done?

As ill-considered legislation has prostituted the protective function that statutes should exercise upon civic welfare and the sanctity of science, in matters pertaining to jurisprudence, the *Journal's* battle has been waged consistently that:

1. All persons attempting to diagnose and to treat human ailments shall stand equal before the law.

2. All persons attempting to diagnose and to treat human ailments shall submit to the same license requirements upon the point of the fundamental or preliminary educational standard.

3. All persons seeking a license to diagnose and to treat human ailments, shall be passed upon by the same board and by only one board, as to the fundamental and professional qualifications of such proposed licenses.

4. The state law shall so provide that all persons engaging in the practice of medicine, under any name, whatsoever, shall be denied a license, until these principles have been complied with.

Repeatedly the *Journal* has called attention to the fact that:

1. Despite strenuous endeavor to keep on the alert as to the status of matters legislative, and even in the face of a degree of progress, the most important work remains to be done, and every doctor in the state faces the necessity for personal labor in a broad field.

2. Each succeeding year sees introduced into the legislature practically the same bills, that, up until the present have not been met with a thoroughly constructive program for their defeat and that until the medical profession organizes into an ironclad battering ram to such an end, those identical cult bills—masterpieces of malfeasance—will recur annually for combat. Those cult bills are cancerous. They need extermination, not palliation.

3. That the men elected to legislative halls must be chosen with care, and given a preëlection education in the aims and desires of the medical profession, as to what is necessary for safeguarding the welfare of the community.

4. That the medical profession must keep in touch with politics since men who promise anything and everything as preëlection vote getting tactics later repudiate these promises, and both before and after election contacts are necessary to the medical profession, if even half-way justice is to be secured.

5. That it is the definite duty of each and every member of the medical profession to realize his or her individual responsibility in regard to legislation that affects the health of the people, and the protection of medical science as a human beneficence.

6. That physicians must establish fluid contact with the members of the legislature; calling upon them often, enlightening them and teaching them the laws that should be enacted in order to defend the health of their constituents, and to enliven the interests of the lawmakers in the public health question.

* * * * * *

The price of democracy in medicine is organization, eternal vigilance and unending personal effort.

In view of which it is suggested, for the safety of the public health, the future of medicine and the individual interest of every man and woman in the medical profession that

1. Each individual member of the profession shall do the hardest work of which he or she is capable in each assembly district for each election, especially in the exercise of the privileges and duties of citizenship to employ every influence possessed and at hand to elect to the legislature men and women who promise to stand for laws and conditions believed to be right and necessary by the medical profession, and this should be done regardless of all party label.

2. That no subject touching on the well-being of the body politic is alien to the physician.

3. That the practice of medicine has emerged from the obscurity of tradition and dogma, as a calling with kinship to all other callings.

4. That medicine is a profession with roots reaching into all strata of society and probing into the bedrock of the nation's social trust.

Therefore, it is quite appropriate to deal here with outstanding features of problems occupying public attention, and which are a menace to the future of medical practice. * * *

Emphasizing again the code of ideals for which the official organ of the society stands, and the menaces current to the future of medical integrity, the *Journal* is distinctively against:

1. Lay Dictation of Medical Practice, whether by statute or insidious financial "endowment" or "foundation" support.

2. State Medicine.

3. The false promise of "Federal Aid" with its implications of "gifts" from a source that has nothing of its own to give.

4. The Overtrained and Usurping Nurse, embodying the truth of the danger of a "little knowledge."

5. Compulsory Health Insurance.

6. Workmen's Compensation.

7. Free Hospitalization and the Maintenance of Indiscriminate Free Clinics.

8. Adoption of Russian ideas in American homes where these ideas appertain to sex license and moral debacle.

9. All catspaws for state subsidies which purport to do exactly what they do not of which the Sheppard-Towner Act is a type.

The *Illinois Medical Journal* stands equally in favor of:

1. A judicious, skilled campaign of lay education that will bring the public back into close touch and genuine appreciation of the science of medicine. This is one of the day's fundamental tasks for the thinking physician.

2. A continuance of the splendid coöperation among the county societies that has helped the *Illinois Medical Journal* to wage a good fight against pernicious political influences.

3. Extended organization among physicians until the doctor shall have as much legislative influence as the plumbers' and freight handlers' unions.

4. Faith in the future of medicine and the rank and file who carry on.

5. Adequate pay for adequate service.

6. America for American ideals of cleanliness, wholesomeness, freedom and democracy.

7. The fitting commemoration of next year's seventy-fifth anniversary of the State Society.

8. The invasion of public affairs, especially political and public health fields, by members of the medical profession.

THE TRUE PHYSICIAN AND HOW YOU MAY RECOGNIZE HIM

(Read, approved and ordered published by the Executive Committee of the California Medical Association.)

What doctor to call is a momentous question to ever-increasing numbers of people. It always has been a problem, but the many facilities stimulating the "wanderlust" spirit keep ever-growing numbers of people away from home friends and family doctors. The problem is also constantly being accentuated by the breaking down of laws and methods employed by state governments in placing their stamp of approval (license) upon those who treat the sick.

California, as "the world's playground," has an exceedingly large element of floating population. It is also quite well known as a state that puts its stamp of approval upon all sorts of cults and inadequately educated practitioners of healing.

Hundreds of appeals come to medical organizations, medical publications and other medical agencies from guests at hotels and transients of all classes, asking to be referred to a "reliable doctor." Obviously, medical organizations cannot give this information further than to show enquirers a list of members of medical societies and the staffs of good hospitals.

It is believed that intelligent persons will find little difficulty in selecting a competent physician themselves by measuring them by the following points:

WHAT CHARACTERIZES THE TRUE PHYSICIAN

1. His education is attested by the degree of "Doctor of Medicine" from some worthy institution of learning.

2. His moral, ethical and professional standing is attested by his membership in his county, state, and national medical associations.

3. His standing as a man (or woman) and as a citizen is attested by precisely the same standards applicable to others.

4. His legal standing should be attested by his license to treat the sick. Unfortunately, this license means very little in many states, and in few it is more unreliable than in California.

5. The true physician never practices, never recognizes and never connubiates with those who do practice, sectarian or secular medicine, fads or cure-alls of any sort under any circumstances whatsoever.

6. He considers the patient rather than the disease, and he utilizes all proved knowledge and any or all proved methods in the treatment of his patients.

7. He recognizes that every patient—and every human being for that matter—needs advice calculated to avoid and prevent health dangers, correct existing troubles, and prevent their repetition or progress.

8. He knows that the infirmities of the body, mind, and soul are inseparably linked together so as to require all that science, art, and personality can bring to bear in the patient's behalf. He renders what he can of these services, and he delegates the others wisely.

9. He understands that no one person can know or practice to the best advantage all phases of the great field of medicine; and, therefore, whenever indicated and feasible, he asks other physicians for the assistance he needs.

10. He either maintains, or has contacts which insure, adequate consultation, laboratory, x-ray, nursing, hospital, and all other services necessary for the welfare of his patients.

11. He follows the moral code of his profession, which insures confidential, sympathetic, consecrated service to his patients in such volume and at such times and in such places as are provided.

12. Like any other servant, he is entitled to a just compensation, but again he follows that provision of his ethics that entitles his patient to service at a compensation entirely consistent with his ability to pay.

13. He neither indulges in nor permits "personal puffery." When his name is seen in the public press, it is usually as the author of some dignified statement about the condition of some patient whose welfare is a matter of public concern. More rarely he may give an authorized interview or write an article for public information upon some health subject. He relies for the growth of his own clientele upon the influence of the ever-widening circle of those friends whom he has served.

14. If older and more experienced, he is ever extending the helping hand to the worthy younger men of his profession. And if a younger man, he is upholding the prestige of those already established. He is always interested in and helpful to worthy members of the ever-enlarging groups of assistants he must utilize to render the best to his patients.

15. He will admit that the best medical education is often inadequate, and he will endorse the statement of Hippocrates that "experience is fallacious and judgment difficult." But he feels that physicians are the only persons even remotely prepared by education and training for leadership in matters pertaining to the improvement of health, the limitation of diseases, and the treatment of sick people.

16. He contributes, when he can, to medical literature; attends and takes an active part in medical society meetings; subscribes to and reads good medical journals; he thoroughly examines and carefully studies his patients, and he always makes written records of his findings. He is never boastful nor inclined to discuss his patients with others. He never guesses; when in doubt, he says so and invites consultation or assistance. He realizes his responsibilities and approaches his problems with the humility, seriousness, and earnestness of purpose that ever characterizes the servant of God or of man and of science.—*California and Western Medicine*, July, 1924.

BE SURE TO REGISTER AND DON'T FORGET TO VOTE

There has been so much criticism of the medical profession in their lack of duty in the past in relation to registration and voting, that we herewith print in part a digest of the acts relating to personal registration, etc., prepared by George D. Thorn, Chief of Election Bureau, State Department, Harrisburg, Pa.

Cut this out of the Journal and place it in some prominent position on your desk so that you may not forget your duty as a citizen of the great state of Pennsylvania.

PERSONAL REGISTRATION IN CITIES

15. The registrars will sit at their respective polling places for the purpose of personally registering prospective voters on the following days:

Thursday, September 4, 1924.
Tuesday, September 16, 1924.
Saturday, October 4, 1924.

In Philadelphia the registrars sit from seven o'clock a. m. to one o'clock p. m. and from four o'clock to ten o'clock p. m. of each registration day.

In Pittsburgh and Scranton the registrars sit from seven o'clock a. m. to ten o'clock a. m. and from four o'clock p. m. to ten o'clock p. m. of each registration day.

In all other cities the registrars sit from eight o'clock a. m. to one o'clock p. m. and from two o'clock p. m. to six o'clock p. m. and from seven o'clock to ten o'clock p. m.

Every person claiming the right to vote must appear in person before the registrars, in the voting district in which he lives on one of the registration days prior to each November election. If he has moved into another district subsequently to the last November election he must appear in person before the registrars in the district to which he has thus removed in order to enable him to vote at the ensuing spring primary, or any special election.

In Philadelphia, Pittsburgh and Scranton a special day for the registration of voters who desire to register for the spring primary and who were not registered for the last November election will be held on Wednesday, March 19, 1924, and in all other cities such special registration day will be held on Wednesday, April 2, 1924.

After the spring primary election *every voter* must again be registered for the November election.

No voter's name can be placed on the personal registration list unless a valid tax receipt is shown to the registrars, except in the case of persons who are over twenty-one years of age and will not have reached the age of twenty-two years until after the day of the November election, and they will be required to make an affidavit to that effect.

No voter can receive and vote a party ticket at the primary unless enrolled as a member of the party at the time of registration.

ASSSESMENT OF VOTERS

16. The Constitution requires that voters shall have been assessed at least two months before an election. All voters who paid no tax within two years and who desire to vote at the spring primary can be assessed two months before that time, the assessors sitting at the polling places on the last two days of the period, which are February 19 and 20, 1924. They will also sit at the polling places two months before the November election, the two days being September 2 and 3, 1924.

PAYMENT OF TAX

17. Payment of tax for the purpose of voting may be made at any time before voting at the primary election but must be paid at least one month before the November election. The last day is October 4, 1924.

18. Any person whose name is on the register of any city shall be entitled to vote at any general, special, municipal, or primary election, unless it shall be shown, to the satisfaction of the election officers, that he is no longer a resident of the election district in which he is registered. If his name is not registered, he shall not be entitled to vote at any election. Before receiving his ballot, every voter shall satisfy the election officers of his identity, and, if challenged, by signing his name in the place provided for that purpose. An elector desiring to vote on age must have been registered before the election.

REGISTRATION IN BOROUGHS AND TOWNSHIPS

19. Voters residing in boroughs and townships must be registered and assessed. Unless they are assessed they cannot pay the necessary tax to qualify them to vote.

While it is possible to vote in boroughs and townships without being registered if a tax has been paid within two years, the voter if challenged must produce the affidavit of a qualified voter of the district that the voter has lived in the district at least two months immediately preceding the election. This trouble will be avoided by calling on the assessor who will sit at the polling place between the hours of ten o'clock a. m. and three o'clock p. m. and from six o'clock to nine o'clock p. m. on the 63d and 62d days before the primary, being February 19 and 20, and before the election being September 2 and 3, 1924.

Assessors may be called upon at any time before these last two days for the purpose of being assessed, and, when convenient, every prospective voter should attend to the matter before these days arrive, and make certain that their names are properly assessed and registered.

The tax books will be in the hands of the tax collectors within a few days after September first, and all new voters should pay their taxes at the first opportunity, especially those living in cities, as they are required to produce their tax receipts before they can be personally registered, and, as there are but three days for this purpose, and the last day upon which tax can be paid is also the last registration day in cities, this important duty should not be delayed.

Dr. O. Pine queries: How can we suppress two great enemies of the general welfare—the individual who is constantly intriguing for a place in the sun, and the one who is constantly intriguing for a place for a son?

Dr. O. Pine queries: A certain cancer-alarm runs down thuswise: "The average physician is still neglecting cancer." Shall we infer from this that nobody else is at fault, not even the nonethical compiler of such circulars?

Dr. O. Pine queries: Would you permit a burglar to carry on after passing an examination equivalent to that of a first-class mechanic? Well, why should the quack practice his calling after qualifying legally by examination for the practice of scientific medicine?

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August, 1924

EDITORIALS

THE READING PROGRAM

The August number of The Atlantic Medical Journal contains the proposed program for the Reading Meeting of the Medical Society of the State of Pennsylvania, October 6-9, 1924, prepared by the Committee on Scientific Work. How well the Committee succeeded in presenting subjects of timely interest and personal interest, is left for you to decide.

This session of the Society may well be called "The Symposium Meeting," as each general session and section meeting will have a symposium on some subject daily, since so many requests have been received so to arrange the program this year. Experience in the past has demonstrated that a good symposium draws a larger attendance, and holds the interest of the members better than a collection of single papers. The numerical attendance will be carefully noted by the secretaries and recorded by the Committee. The success of this meeting will largely determine whether the symposium plan shall be duplicated at future sessions. Read the entire program, mark and pick out the subjects you are especially interested in, and then ask yourself, can I afford to remain away?

The Committee on Scientific Work have formed their own opinion of the Reading program, but modesty at this time forbids their expressing it. They prefer that you shall pass judgment on their efforts this year.

All the roads leading to Reading will be in first-class condition at the time of the meeting. Accessible by train and auto, Reading, situated between Philadelphia and Harrisburg, should attract a large number of men from these two cities and the central part of the state. The Committee is hoping the program will appeal to a larger number of the men in some of the counties than attended the Pittsburgh Session last year.

We are striving for a big turnout. Will you do your part by attending the Reading Meeting next October 6-9, 1924?

T. G. Simonton, *Chairman,*
Committee on Scientific Work.

SUGGESTIONS FOR AUTHORS AND DISCUSSORS AT THE READING MEETING

The Committee on Scientific Work of the Medical Society of the State of Pennsylvania decided at its May meeting to call attention to some rules that will help to make the sessions and section meetings more interesting from the standpoint of the audience.

1. If you have anything interesting to say, it is important that you enunciate clearly so that you can be heard with ease.
2. Speak distinctly and always face your audience.
3. A paper that you can read silently in ten minutes, when read aloud will require thirteen minutes.
4. A paper that you can read silently in fifteen minutes, when read aloud will require eighteen minutes.
5. Practice the paper you intend to present at the Reading session, reading it aloud to an imaginary audience, in a large room, garage or stable.
6. A prominent speaker is very often a poor enunciator, while a novice striving to be heard may leave the best impression.
7. If you do not read your paper, but speak extempore, handing the paper to the secretary when you are through speaking, see that it does not exceed approximately 7,500 words. The

JOURNAL is not an encyclopedia for any subject you may care to present or have printed.

8. Discussors should request the author of the paper they are to discuss to furnish them with a copy in advance so that they may make adequate preparation.

9. Discussors should promptly and without urging ascend the platform and speak so that they can be heard in the farthest part of the room.

10. A section meeting that is short, snappy, and with the discussions to the point, is far more interesting than one that is long drawn out.

11. The section officers have been instructed to adhere strictly to the time limit, so if you are called down before you have had time to reach your conclusions, it will be your own fault—either that or else you did not read these suggestions.

T. G. SIMONTON, *Chairman,*
Committee on Scientific Work.

PITUITARY LESIONS

Not infrequently, in fact in 50 per cent of patients with pituitary lesions passing through a neurosurgical clinic, vision has been lost entirely in one eye and is seriously affected in the other. In other words, throughout a period of several years the precise cause of the visual disturbance has not been recognized, the presence of a pituitary lesion not suspected. To the profession at large pituitary disorder probably means one or the other of the striking disturbances of pituitary function, as seen in gigantism or acromegaly, in the dwarf or in the excessive adiposity of the Frolich syndrome. To the profession generally, pituitary disorder is regarded as belonging to the rare or unusual ailments. To the neurosurgeon, pituitary lesions represent possibly ten per cent of the indications for intracranial operations. Probably the explanation for delay in the early diagnosis of pituitary lesions lies in the lack of application of the fact that a pituitary lesion may exist for a long while without any apparent evidence other than the visual disturbance. Many a case comes to the neurosurgical clinic without any signs of acromegaly or adiposity but with advanced visual disturbance, and yet by the simplest methods of examination the true nature of the lesion might at least have been suspected. The two outstanding earmarks of a growing pituitary lesion are the distortion of the visual fields and the enlargement of the sella turcica. And so by the crudest methods of perimetry and by the x-ray the diagnosis may be established.

The importance of all this has to do with the conservation of vision. Early operation in the large majority of cases will restore the fields to normal and prevent blindness. If the operation is postponed until optic atrophy is far advanced, restoration of vision is out of the question. There is no intracranial lesion in which an accurate diagnosis and localization can be made in so large a percentage of cases as in lesions of the pituitary.

CHARLES H. FRAZIER, M.D.

THE VALUE OF PERIODIC HEALTH EXAMINATIONS

An estimate of the benefit which the public may derive from periodic examinations cannot at this time be supported by statistics of much weight, since few large groups have been examined and followed for a time long enough to justify deductions being made. The Metropolitan Life Insurance Company calculated the mortality rate in those policy holders examined by the Life Extension Institute and compared this rate with the mortality for the entire Ordinary Department. It was found that those who were examined in 1914 and 1915, for a period of five years following the examinations, showed a mortality of 28% more favorable than that of the entire group. Few other statistics are available, but we believe that this new development rests on a sound basis, both from the standpoint of scientific medicine and that of common sense.

There are three varieties of deviation from the normal which the examiner may detect: (1) apparently trivial disturbances of function or improper conditions of working or living, which may be corrected before the onset of disease; (2) disease in an early and curable stage; (3) disease in an advanced and incurable stage, but in which life and a degree of usefulness may be prolonged by proper advice. A recently published law of functional strain (Meakins, *Lancet,* April 26, 1924) is of interest in connection with the last-mentioned class of cases. "If an organ be performing its work with difficulty a gradual deterioration will occur if this increased demand is persisted in. On the contrary, if the work demanded of a diseased organ be less than its capacity at the moment, a certain degree of restoration will ensue."

The blank form published by the Committee on Public Relations has on one side an outline which the examinee is to follow in recording his medical history and his habits of living and working. The blank is given to him some time before his appointment and he is asked to devote some time and care to filling it out. A consideration of this history offers the greatest hope of securing benefits from these examinations. For example, the history may lead to the early recognition of tuberculosis, in which signs are preceded by general ill health and loss of weight and strength. The cardiovascular diseases present a field in which the history is of the greatest value, and periodic examinations hold great promise of being an effective means of checking the ravages of these diseases. In regard to gastro-intestinal disorders, if the symptoms of disturbed digestion are noted at an early period and a diet instituted which reduces the work of the digestive tract to a minimum, there is a possibility of the restoration of function and the arrest of disease which would otherwise have developed. Many other instances of the same sort will occur to the reader.

Some of the leads secured from the history and physical examination will necessitate further physical or technical examination or laboratory study. This, however, is not a part of the periodic examination proper. Although the specialist may be called in to assist at some stage, this method is distinctly one for the general practitioner, and promises to do much to strengthen his leadership in the profession. It also strengthens his relations with the public and may be a factor in the extermination of the cults. The most important work of the doctor is, and probably always will be, the treatment of the emergency breakdowns of the human body, but in this movement he also takes front rank in preventive medicine. He becomes a sanitary engineer and brings expert management into the daily life and conduct of those whom he examines. When called upon to treat an emergency breakdown in one of these persons, he will enter the sickroom with unusual confidence and efficiency.

As for the hope of advancing our knowledge of medicine, there is nothing more cogent than the article on "The Future of Medicine," by Sir James Mackenzie, in *Oxford Medicine,* which points out that the advance of medicine must be by means of the study of the early symptoms of disease and the long continued follow-up of patients. This is especially possible to the general practitioner who does periodic examinations.

The success of this movement depends on securing the interest and coöperation of the individual members of the profession; they must be convinced of its value and interested in its application, and the logical first step is to induce the doctor to have an annual examination made of himself. It is the duty of each of us to prolong our period of usefulness as much as possible and we have here a method of great promise. Every member of the State Society who expects to attend the Reading session should apply for examination, which will be done by capable men in suitable, quiet rooms. The physician who cannot attend this meeting should secure blanks from the State Society, fill out his history and arrange for examination by one of his medical friends.

E. B. Edie.

A GOOD EXAMPLE

The California State Medical Society has recently asked its Members not to use the prefix "Dr." on their "shingles," but to substitute the more accurate suffix "M.D."

This is an example that could well be followed the country over, and we rise to amend it only by the suggestion that the same system be followed on letterheads, prescription blanks, etc.

The title "Doctor" has ceased to have its old meaning now that it has been adopted by the "Doctor of Osteopathy," the "Doctor of Chiropractic," the "Doctor of Optometry," and the "Doctor" of what-not.

Lacking the telepathic gift, it is well-nigh impossible for a stranger to divine whether "Dr. X. Y. Jones" is an advocate of one of the irregular cults, a follower of Hahnemann, a general practitioner of the regular school, or one who limits his practice to a specialty.

Not long ago a young man stopped at the Journal office to be directed to the office of "someone who isn't specializing." He said that he had stopped at several offices and was told that the doctor could not treat him because he was a specialist in some branch not applicable to the case. This does not signify that there are not plenty of general practitioners in our city but it is a pretty good indication that every city should have somewhere available to the laity a list of reputable practicing physicians, showing the particular type of work they are doing. While smacking rather of quackery, from the layman's point of view it would also be an improvement if every physician were to indicate his branch of practice on his sign.

M. S. B.

ROUTINE LABORATORY EXAMINATIONS IN THE HOSPITAL

Certain laboratory examinations should be performed upon all patients admitted to the hospital. Such examinations which may be termed "routine," although apparently not especially indicated in a given case, often lead to the diagnosis of some unsuspected condition.

A report from one hospital shows that in one thousand consecutive admissions, Wassermann reactions, leucocyte counts and urine analyses were performed upon each patient. Of these one thousand patients, 167 showed positive Wassermann reactions. There was an average of twelve admissions a day with an average of two positive Wassermann tests daily. While it is almost impossible to ascertain the number of cases in which syphilis was suspected we may surmise that it was by no means as high as two in every twelve, especially as none of these was admitted for the treatment of syphilis and none upon admission received the provisional diagnosis of syphilis.

The records of this hospital indicate the ascertaining of valuable information in like manner, though to a less degree, from its routine leucocyte counts and analyses of urine.

It is quite apparent that as many varieties of examinations as possible or practical should be considered as routine and performed upon all patients. It is advisable to perform the abovementioned examinations, viz., Wassermann reactions, leucocyte counts and analysis of urine routinely upon all patients upon admission.

If bacteria or pus are found in the fresh specimen of urine, when performing the routine test, a catheterized specimen drawn into a sterile glass-stoppered bottle or other sterile container, should be sent to the laboratory for culture upon human blood agar-agar and Endo's medium and for a second microscopic examination, as vaginal pus will be eliminated by the catheterization. If the specific gravity is low it should be observed upon several subsequent specimens, and if constantly low or if albumin or casts are present, it should be the routine procedure to perform the following tests: (1) urea estimation upon the measured 24-hour specimen; (2) blood urea test; (3) renal function test. Other blood chemistry tests such as chlorides, nitrogen, etc., may be specially ordered but are not considered routine. If sugar is present the routine procedure, without special request, includes urine examinations for acetone, diacetic acid and the blood sugar estimation.

Wassermann reactions should be performed upon the blood collected from the cord of all infants born in the institution.

The blood coagulation time should be determined routinely upon all patients admitted for tonsillectomy.

If a patient expectorates, the sputum should be collected in a sterile container such as a Petri dish and submitted to the laboratory for examination of slide preparations stained by both Gram's and the Ziehl-Nelson methods. If organisms resembling pneumococci or influenza bacilli are observed, a mouse should be inoculated intraperitoneally and a slide preparation of the peritoneal fluid made when the mouse dies or at the end of ten hours, by obtaining a drop of fluid by peritoneal puncture with a glass capillary pipette. If pneumococci are present in great numbers, the organisms obtained by washing the peritoneal cavity should be typed by the precipitation and agglutination reactions with the three antisera.

Every specimen of pus or discharge from any source (excepting urethra and vagina) should be submitted to the laboratory for the microscopic examination of slide preparations stained by Gram's method, and for culture upon human blood agar-agar plates. If no organisms are observed microscopically, a guinea pig should be inoculated to determine the presence or absence of the tuberculosis bacillus. If this inoculation is made subcutaneously upon the inner aspect of the thigh the organisms may readily be observed in ten or twelve days by crushing the inguinal lymph node between two slides and staining by the Ziehl-Nelson method. Vaginal and urethral discharges should be collected with a sterile swab by the nurse or resident physician, who should make slide preparations and submit them to the laboratory for a microscopic examination by Gram's stain for gonococci or other organisms.

From all throat inflammations slide preparations should be submitted to the laboratory for cultures upon Löffler's blood serum medium and upon human blood agar-agar.

Scrapings from all skin eruptions should be made into a drop of 5% potassium hydroxid on a slide and a cover glass applied, for immediate microscopic examination for fungi. Wet slide preparations with cover slip should be made from lesions of the penis or other lesions resembling chancre, for immediate dark field examination.

All tissues removed at operations should be submitted to the pathologist, who will record a gross description of them and their measurements. Those that cannot be definitely diagnosed from the gross appearance, he will section, and record the histological findings. It is remarkable how many surprises the pathologist will give the surgeon in regard to tissues which the surgeon does not deem necessary to be examined.

These tissues, upon removal should be immediately immersed in 4% formaldehyde solution, unless a bacteriological examination is desired, when they should be placed in a dry sterile container and sent immediately to the laboratory.

All excised tonsils should be placed in sterile containers and sent to the laboratory for a culture from the interior upon human blood agar-agar.

The above examinations should be considered as routine, that is, to be performed without special request of the attending physician or surgeon. Other examinations should be made by request as suggested by the condition or symptoms of the patient or as suggested by the previous laboratory examinations.

If paralyses, ataxia, mental derangements, symptoms of meningitis, brain tumor or other brain or cord conditions are present, a lumbar puncture should be performed and the spinal fluid examined *routinely,* by which is meant cell count, globulin test, sugar estimation, colloidal gold curve, Wassermann, guinea pig inoculation for tuberculosis, and if the fluid is cloudy or the cell count high, a slide preparation stained by Gram's method for the observation of organisms, a slide preparation stained by Wright's stain for a differential leucocyte count, and cultures upon human blood agar-agar for such organisms as the streptococcus viridans, the streptococcus hemolyticus, etc., and upon some medium such as sheep serum, dextrose, agar-agar or chocolate medium for the growth of the meningococcus.

Before discharging a cured typhoid fever patient from the hospital the stools and urine should be sent to the laboratory three times at intervals of two days to be cultured for the bacillus typhosus, using Endo's medium and transferring suspicious colonies to Russell's medium.

Nasopharyngeal cultures for the meningococcus should be made upon patients convalescent from meningitis and upon all attendants upon meningitis cases, three times at intervals of five days.

The question arises as to who is responsible for having these routine examinations performed, especially those which are routine by virtue of the patient's symptoms or condition or on account of results of previous laboratory examinations. Obviously the laboratory cannot be thus responsible. The honors are to be divided between the resident physician in charge of the case and the nurse in charge of the patient or ward in which the patient is confined.

When a patient is admitted the nurse in charge sends requests to the laboratory for Wassermann reaction and leucocyte count and sends a specimen of the urine to the laboratory with a request for the analysis. If the patient is admitted for tonsillectomy the nurse sends a request for a coagulation time.

When an infant is delivered the nurse holds a sterile tube into which the obstetrician allows the cord blood to flow. She then sends it to the laboratory with a request for a Wassermann reaction. The resident physician should make urethral or cervical smears, while the nurse may make vaginal smears. Either resident physician or nurse may collect specimens of pus in sterile tubes or make throat cultures and the nurse may send in the sputum specimens with the requests. The follow-up examinations and those indicated by the patient's condition or symptoms must naturally be ordered by the resident physician, who should be instructed, upon assuming his duties, as to the character of these "dependent" or "secondary" routine examinations.

The various types of routine examinations may be listed as follows: The strictly routine examinations are (1) Wassermann reactions, (2) leucocyte counts, (3) analysis of urine, (1) coagulation time on tonsil cases, (2) cord blood Wassermann, (3) tissues removed at operation.

Secondary routine examinations depending upon previous laboratory examinations are: (1) urine urea, (2) renal function test, (3) blood urea, (4) urine for acetone and diacetic acid, (5) blood sugar.

Secondary routine examinations, depending upon the presence of inflammations, discharges, etc., are: (1) sputum examinations, (2) throat cultures, (3) urethral or vaginal slide preparations, (4) examination of pus, discharges, etc., from other senses (cultures as well as slide preparations), (5) dark field examinations, (6) lumbar puncture and examination of spinal fluid, (7) bacteriological investigations for possible "carriers." G. R. M.

SAVE EYES

"Keep everlastingly at it" should be the slogan, followed by words of encouragement, for those having the welfare of mankind at heart in their everyday contact with toilers in industry. A recent number of *Labor and Industry,* the official bulletin of that Department of our Commonweath, contains the very important statistical information that in 1923 there were 649 eyes lost by those employed in various industries throughout the state. This means that in every working day more than two workers lost an eye. More eyes were lost than the combined total of all the arms (77), legs (116), and hands (308), that were cut off.

Eye safety standards must be maintained, protective devices must be used, and each individual worker must be constantly impressed with the *cost of carelessness* if we expect to lower this excessive loss of a most precious possession.

G. H. C.

Dr. O. Pine queries: What lamentable cerebration is manifested by the reviewer who complains that a certian medical lexicon is deficient in "signs indicating pronunciation"? Why not attend scientific medical meetings, note how the star performers pronounce the words, adopt the only other possible pronunciation, and become a walking authority in medical Anglo-Greco-Roman?

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.
Secretary
8014 Jenkins Arcade Bldg.
Pittsburgh, Pa.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to July 21st:

Allegheny: *New Members*—John B. Boaz, 2137 Wylie Ave.; Romeo Luongo, 914 Webster Ave.; Charles R. Stewart, 403 Grant St., Pittsburgh; James F. Hufford, West Elizabeth. *Death*—Irwin J. Moyer (Univ. of Penna., '88), suddenly from heart disease, June 30, aged 66.

Beaver: *Death*—Ulysses S. Strouss of Beaver (Western Reserve Univ., '73), May 17.

Blair: *Reinstated Member*—William P. Harlos, 1428 Twelfth Ave., Altoona.

Butler: *New Member*—R. A. Smith, Butler.

Cambria: *New Members*—Paul W. Riddles, 533 Locust St.; Louis A. Wesner, 424 Franklin St.; Claude J. Wesner, 639 Franklin St.; William M. Wallace, 441 Locust St., Johnstown; George F. Wright, 117 Main St., Conemaugh; Charles H. Schultz, 538 Park Ave., Johnstown. *Reinstated Member*—Patrick J. Kelly, Patton.

Chester: *New Member*—Charles K. Reineke, West Chester.

Clarion: *Removal*—William C. Keller from New Bethlehem to 216 N. Prince St., Lancaster (Lancaster Co.).

Dauphin: *Death*—David B. Traver of Steelton (Jeff. Med. Coll., '69), June 16, aged 83.

Lancaster: *New Members*—Edward S. Crosland, St. Joseph's Hospital; Michael G. Chadman, 315 E. King St., Lancaster. *Transfer*—John A. Boyd, Christiana, from Allegheny County Society. *Removal*—Walter F. Mylin from Intercourse to 546 E. Orange St., Lancaster.

Lehigh: *Removal*—Clarence F. Ruloff from Pitcairn to 356 N. Penna. Ave., Greensburg.

Luzerne: *New Member*—Henry E. Bittner, Hazleton. *Removal*—John A. Hilbert from Pittston to 38 N. Franklin St., Wilkes-Barre. *Deaths*—Walter Davis of Wilkes-Barre (Univ. of Penna., '97), June 2, aged 52; Richard P. Taylor of Wilkes-Barre (Univ. of Penna., '92), June 16, aged 62.

Northampton: *Removal*—James E. James from Philadelphia to 128 W. Fourth St., Bethlehem.

Philadelphia: *New Members*—T. McKean Downs, 49 Bethlehem Pike, Chestnut Hill; Denis T. J. Sullivan, 1439 N. Eleventh St.; Harry Shay, 963 N. Fifth St.; Leopold Vaccaro, 1917 So. Broad St., Philadelphia. *Removal*—Marion O'Harrow from Smith College, Northampton, Mass., to c/o Mrs. Harry Cooper, Carsonville, Mich.; Addinell Hewson from Philadelphia to 106 Sussex Ave., Spring Lake Beach, N. J. *Death*—Floyd D. Drumheller of Philadelphia (Univ. of Penna., '94), May 21, aged 44.

Snyder: *Removal*—Edwin M. Miller from Beavertown to Millheim (Center Co.).

Schuylkill: *Removal*—G. H. Boyer from Washington, D. C., to Army Bldg., 39 Whitehall St., New York, N. Y. *Death*—George R. S. Corson of Pottsville (Jeff. Med. Coll., '96), recently, aged 57.

Washington: *New Member* — Joseph W. Allen, Monongahela.

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since June 16th. Figures in first column indicate county society numbers; second Column, State Society numbers:

June 17	Armstrong	57	7193	$5.00
18	Lancaster	125–128	7194–7197	20.00
20	Dauphin	153	7198	5.00
	Blair	88–89	7199–7200	10.00
24	Butler	53	7201	5.00
	Montgomery	148	7202	5.00
25	Cambria	133	7203	5.00
27	Washington	123	7204	5.00
30	Cambria	134	7205	5.00
	Allegheny	1248–1251	7206–7209	20.00
July 1	Lackawanna	225	7210	5.00
2	Center	25	7211	5.00
	Blair	90	7212	5.00
8	Luzerne	246	7213	5.00
	Northampton	141	7214	5.00
9	McKean	39	7215	5.00
11	Luzerne	247	7216	5.00
	Greene	27	7217	5.00
14	Cambria	135–139	7218–7222 (@ $2.50)	12.50
	Philadelphia	1918–1941	7223–7246	120.00
16	Chester	72	7247	5.00
	Venango	53	7248	5.00
21	Delaware	93	7249	5.00

FREDERICK L. VAN SICKLE, M.D.
Executive Secretary
230 State St., Harrisburg, Pa.

NATIONAL MEDICAL LEGISLATIVE CONFERENCE

It has been the opinion of many that in recent years many changes have been taking place in medical legislation and especially legislation pertaining to the healing art relating to practice and the laws which govern the same. In the mind of the average legislator there is the thought that medical men of the country have combined to protect their own interests, while in reality this has not been the case. In all probability there is no profession so open to attack as the medical profession and at the same time one in which so little has been done in the line of medical protection of the type which we find is zealously guarded by the legal profession.

At the instance of Dr. William C. Woodward, Executive Secretary of the Legislative Bureau of the American Medical Association, an invitation was extended to the presidents of all the medical societies and associations of the Union to send a representative to attend a meeting to be held in Chicago during the annual session of the A. M. A. This meeting was held on Wednesday, June 11th, at 2 p. m., in the Assembly Room of the A. M. A. Building. There were present representatives of over thirty of the states, some having more than one representative present. A temporary organization was effected by electing Dr. Upham of Ohio as chairman, and Dr. W. C. Woodward as secretary. It was decided that a more permanent organization be created, and for the purpose of arranging for further meetings a committee was appointed to meet with the Board of Trustees in order to effect an arrangement by which this conference can be held simultaneously with the State Secretaries' Association meeting.

It was also agreed that in the interest of national legislation we should have some organization which would make it possible for each state to receive such help as might come from a national organization. The meeting resolved itself into an experience meeting, and in alphabetical order the state representatives were called upon to tell their experience in regard to legislation and point out the needs in their respective states relative to national coöperation. It was interesting to note that there was a unity of thought in regard to the treatment of legislation relating to the cults. There was no harsh criticism of those who desire to follow limited forms of practice of the healing art, but it was the unanimous opinion that anyone who desired to practice such limited branches should be compelled to have the necessary preliminary, premedical and sufficient medical education in order to make a proper diagnosis or analysis and safeguard the interests of the public by sufficient knowledge of human anatomy, physiology, biology, physics, chemistry, etc.

It was also agreed that more of the members of the profession must become interested in medical legislation, public health legislation and state and national legislation as it affects all the branches pertaining to health,. sanitation, etc. Quite some complaint was registered by some of the delegates in that the departments or boards of health of some states are not coöperating with the medical profession as they should and that criticism was brought upon the medical profession in the endeavor to discredit those who practice medicine, and it was hoped that a closer relationship should exist in every state between the medical profession and the department of health of the government.

It was voiced also by some of the delegates that a few socialistic or anarchistic-minded men have been the means of preventing the passage of necessary legislation, which would safeguard the public as well as provide adequate facilities for the practice of regular medicine. There is no question that much of the promiscuous legislation which has been enacted in the years passed has been the result of a careless, indifferent profession, and that it is necessary to strengthen an organization in each state whereby legislation can be properly watched and guided, and that this step forward in the formation of a national medical legislative conference is a wise move.

Since 1915 Pennsylvania has functioned through a Medical Legislative Conference in the work of guiding legislation in so far as it was possible to do so, and up to the present time we are sufficiently pleased with the results of their efforts to urge a continuance of the support which it has received. Now that a step has been made to form a national organization our state societies should feel an interest in the work which may be accomplished by such a body.

PHYSICIANS AND COMMUNITIES EXCHANGE

CONDUCTED IN THE INTEREST OF PHYSICIANS WHO ARE SEEKING TO LOCATE IN A DESIRABLE COMMUNITY, AND OF LOCALITIES WHICH ARE IN NEED OF THE SERVICES OF A DOCTOR OF MEDICINE.

Address communications to The Medical Society of the State of Pennsylvania, 230 State Street, Harrisburg, Pa., giving full information.

Physicians

I have been in poor health for a year, but have now regained my health and wish to enter active practice again. If you know of a location, unopposed, within 50 or 60 miles of Philadelphia in Pennsylvania, kindly let me know, and oblige—*B. W. Genung, M.D., Elmer, N. J.*

My object in this communication is to secure a location for the practice of medicine in this state. Am a graduate of the University of Pennsylvania, 1922, having had twenty-six months hospital experience in Philadelphia. Desire a location where hospital and industrial associations are possible.—*Clarke Kistler, M.D., 206 N. 9th St., Allentown, Pa.*

Communities

We are also informed of vacancies as follows, about which Dr. J. M. Quigley, 922 Dorey St., Clearfield, Pa., may be consulted:

There is an opening at Westover, Clearfield Co., Pa., a town of about 550 inhabitants, surrounded by good farming country. Practice ought to pay about $3,500.

At Lumber City, Clearfield Co., Pa., there is no physician, the former physician having died and his successor having failed in health. Lumber City is a town of about 500 inhabitants and is surrounded by good farming country. It should yield a practice of about $3,500.

Surveyor, one of a group of small mining towns, is now without a physician, owing to the failure of health of its former physician. This town is situated 10 miles from Clearfield and 18 miles from Karthaus. There is no physician in this distance of 28 miles. There are within a radius of 4 miles of Surveyor four fair-sized coal mines, and most likely a contract could easily be arranged with these four companies for the care of their men and families. Besides this, the whole distance between Clearfield and Karthaus is surrounded by a belt of farming country which will add to the practice.

The service rendered in this department is free of charge, and all interested parties are invited to communicate with the Exchange.

THE PARABLE OF KANTDOOIT

BY DR. O. PINE

The Emir of Kantdooit was very much worried by the alarming increase of divers forms of maladies among his subjects and convoked a council of state to consider means of restoring the general health. His councilors were of opinion that the city of Kantdooit was in a very insanitary condition; the streets were pollutions of mire, dung of beasts, decaying vegetables and material refuse, and swarmed with all manner of flies and other insects. It was resolved that drastic measures must be instituted and one skilled in the science of sanitation chosen as Vizier of Health to carry out the necessary remedies.

No one could be found for this office. Everyone summoned to the Great Presence with true diplomatic humility expressed the great sorrow that he felt in being compelled to admit that he did not measure up to so high and honorable an office.

At last the Emir, at the suggestion of his councilors, sent away to foreign parts and his ambassadors brought with them a sage, exceeding wise in the sanitary art, for he preached for many years upon the subject in the University of Fishaghen. This learned doctor, created Vizier of Health, immediately made investigation and received complaints from the people concerning various nuisances, and imposing ordinances, commanded implicit obedience thereto. Many, failing to heed the commands, were publicly bastinadoed and ceased to offend; but many, among them men influential in the state and in the Syndicate of the Merchants, gave no heed, and when a few of their class were bastinadoed rushed to the Emir, crying for justice, saying: "This new Vizier, a stranger, unaccustomed to our ways, because there are filth and flies in front of our shops and bazaars, is constantly summoning us before the Cadi, and although, thanks to our great favor in the eyes of our Impeccable Lord, no harm hath come to us, nevertheless these numerous summonings cause us to lose a great quantity of time away from our business, which accordingly suffers, and when trade flourisheth not, thy kingdom languisheth. We beseech thee that thou remove this enemy of the market-place and in his room place one who shall see that nothing shall be done to harm the business of any man."

Now, the Emir, not feeling that the throne on which he lolled was secure in all its feet, granted their prayer, dismissed the offensive Vizier, and agreed to appoint a successor. This was to be one who would not hurt business, and all the people of the shops and bazaars readily promised to obey him.

Now, searching—high and low, in all quarters—failed to locate anyone who esteemed himself competent to fill the delicate job of abolishing filth and pleasing commerce. At last, a man skilled in the medical art, whose success chiefly was due to his methods being contrary to custom, was mentioned. He had the occult art of doing things in ways manifestly wrong in the eyes of the ordinary man and so often astounded the unbelieving with his cures that all true believers were of the opinion that some Marid was his inspiration. Now, as this queer sage had the unusual quality of never refusing a case, because it was too hard a nut to crack, he grabbed the job as soon as he was solicited to accept it. His first act was to send trumpeters all over the city who announced that the new Visier of Health had proclaimed "Death to anyone who hurts business!" Consequently, exceeding was his immediate popularity, and his abode lacked room for the multitude of gifts from the well-pleased merchants. It was not necessary for him to buy the wherewithal to eat or drink or to clothe the body for many moons.

The next day, a jeweler called and complained that his son was suffering from a fever and that the premises of his adjoining neighbor, the fruit-seller, were in a very insanitary condition, and correction was declined on the ground that business would be hurt. "But, master," said the astounded jeweler, "this nuisance occurs where we live, at our mansions, not at our shops! Whose business can suffer, if this mess is cleaned up?"

The Vizier: "Have you a physician for your son?"

The jeweler: "Assuredly, O wise one!"

The Vizier: "It would hurt the business of this physician if I should give heed to this complaint of yours."

Numerous complaints of like tenor by those having sick ones or fearing to be visited by sickness received the same answer, and after a fruitless appeal to the Emir, who said that they had promised obedience to him who would not hurt business, and that the incumbent had only done what they were exceeding desirous of having done, crestfallen, they convoked an assembly of the keepers of the shops and the bazaars. This was held in a secret place and only those belonging to the Syndicate of the Merchants were accorded entrance. A long and exhaustive discussion of the sanitary dilemma into which they had trapped themselves seemed of no avail until a dealer in sweetmeats arose and said: "O fellow money-getters! It occurreth to me that there is but one way of beating this madman who taketh such great pleasure in confounding us with our promises, which in the way of the world should only be kept as long as suiteth us. Let us not visit him with complaints longer, but each one without noise secretly clean up his own premises and the streets and by-ways pertaining thereto. 'Tis a just revenge to hurt the business of this madman and his confrerers who have taken so mean an advantage of us, well-knowing that we never included in our thoughts, when we talked of business being hurt, any such insignificant calling as the healing of the sick."

And Kantdooit is a clean city even unto this day.

COUNTY MEDICAL SOCIETIES

REPORTERS OF COUNTY SOCIETIES

Adams—James P. Dalbey, M.D., Gettysburg.
Allegheny—Lester Hollander, M.D., Pittsburgh.
Armstrong—Jay B. F. Wyant, M.D., Kittanning.
Beaver—Francis H. McCaskey, M.D., Rochester.
Bedford—N. A. Timmons, M.D., Bedford.
Berks—Clara Shetter-Keiser, M.D., Reading.
Blair—James S. Taylor, M.D., Altoona.
Bradford—Stanley D. Conklin, M.D., Sayre.
Bucks—Anthony F. Myers, M.D., Blooming Glen.
Butler—L. Leo Doane, M.D., Butler.
Cambria—Joseph J. Meyer, M.D., Johnstown.
Carbon—Jacob A. Trexler, M. D., Lehighton.
Center—James L. Seibert, M.D., Bellefonte.
Chester—J. A. Perkins, M D., Coatesville.
Clarion—James M. Hess, M.D., Tylersburg.
Clearfield—John M. Quigley, M.D., Clearfield.
Clinton—R. B. Watson, M.D., Lock Haven.
Columbia—C. B. Yost, M.D., Bloomsburg.
Crawford—Cornelius C. Laffer, M.D., Meadville.
Cumberland—Calvin R. Rickenbaugh, M.D., Carlisle.
Dauphin—W. Minster Kunkel, M.D., Harrisburg.
Delaware—George L. Armitage, M.D., Chester.
Elk—Samuel T. McCabe, M.D., Johnsonburg.
Erie—Anna M. Schrade, M.D., Erie.
Fayette—John D. Sturgeon, Jr., M.D., Uniontown.
Franklin—Samuel D. Shull, M.D., Chambersburg.
Greene—Robert W. Norris, M.D., Waynesburg.
Huntingdon—John M. Beck, M.D., Alexandria.
Indiana—F. J. Kellam, M. D., Ernest.
Jefferson—W. A. Hill, M.D., Reynoldsville.
Juniata—Brady F. Long, M.D., Mifflin.
Lackawanna—G. A. Clark, M.D., Scranton.
Lancaster—J. Sullivan, M.D., Lancaster.
Lawrence—William A. Womer, M.D., New Castle.
Lebanon—W. Horace Means, M.D., Lebanon.
Lehigh—Harold E. Hersh, M.D., Allentown.
Luzerne—H. Irvin Evans, M.D., Ashley.
Lycoming—Wesley F. Kunkle, M.D., Williamsport.
McKean—Francis DeCaria, M.D., Bradford.
Mercer—M. Edith MacBride, M.D., Sharon.
Mifflin—F. A. Rupp, M.D., Lewistown.
Monroe—Walter L. Angle, M.D., Stroudsburg.
Montgomery—John C. Simpson, M.D., Norristown.
Montour—John H. Sandel, M.D., Danville.
Northampton—Frank J. Hahn, M.D., Bath.
Northumberland—Charles H. Swenk, M.D., Sunbury.
Perry—A. R. Johnson, M. D., New Bloomfield.
Philadelphia—Franklin M. Crispin, Philadelphia.
Potter—Ross H. Jones, M.D., Coudersport.
Schuylkill—Arthur B. Fleming, M. D., Tamaqua.
Snyder—John O. Wagner, M.D., Beaver Springs.
Somerset—H. Clay McKinley, M.D., Meyersdale.
Sullivan—P. G. Biddle, M.D., Dushore.
Susquehanna—Robert B. Mackey, M.D., Montrose.
Tioga—John H. Doane, M.D., Mansfield.
Union—Oliver W. H. Glover, M.D., Laurelton.
Venango—John F. Davis, M.D., Oil City.
Warren—M. V. Ball, M.D., Warren.
Washington—Charles C. Cracraft, M.D., Claysville.
Wayne—Hugh Stevenson, III, M.D., Waymart.
Westmoreland—Joseph E. Sunder, M.D., Delmont.
Wyoming—Herbert L. McKown, M.D., Tunkhannock.
York—Pius A. Noll, M.D., York.

August, 1924

COUNTY SOCIETY REPORTS

CHESTER—JUNE

On Tuesday, June 17th, the Chester County Medical Society met at the County Home at Embreeville. There was a very short business meeting, during which Dr. Wm. T. Sharpless was appointed as delegate to the Reading session of the Medical Society of the State of Pennsylvania this fall. Drs. Pleasants and Farrell were appointed as alternates. Dr. Stone reported that the Committee on Compensation supports the Pennsylvania State Commission's recommendations for changes to the Compensation Law.

The first paper of the afternoon was a very clear and masterly discussion of the so-called "One Board Bill," by Dr. Sharpless. In the discussion which followed this paper, the Society had the pleasure of hearing from Miss Martha G. Thomas, a member of the State Legislature, and from several gentlemen who are candidates for election to that body this fall. Miss Thomas expressed herself as being in favor of the bill setting the standard for the requirements for the practice of medicine.

Rear Admiral Braisted then gave a short talk, bringing out the importance of truthfulness and clarity as against ridicule in presenting matters to groups of people for legislative action.

The next paper, by Dr. Kerr, dealt with the Compensation Law. He brought out the following points: That the general effect of the law is an improvement over the old standing of the doctor, but much more so for the insurance companies; that they are now accumulating money for their stockholders and all insured out of all reason, so much so that some of them are handing back to the insurer up to 30% of the premiums collected. J. Ashbridge Perkins, M.D., Reporter.

LYCOMING—JUNE-JULY

The June meeting of the Lycoming County Medical Society was held at the City Hall on June 13, 1924. President A. F. Hardt presided. Dr. William Devitt, Director of Devitt's Camp at Allenwood, Pa., read a paper on "The Five Cardinal Points in the Diagnosis of Pulmonary Tuberculosis." A brief synopsis of his paper follows:

The diagnosis of pulmonary tuberculosis can be divided into two groups: clinical symptoms and positive signs. Have case under observation and care before positive signs predominate. The first clinical symptoms presenting themselves will be fatigue, lack of ambition, tired in the morning, appetite failing and complaints of stomach trouble. May have a slight persistent hacking cough. History of presumed bronchitis or grippe. Afternoon temperature 99.2 or 99.3; later night sweats. This may be as far as your case goes. Some writers class such a case under the abortive type. It is a characteristic picture of an early case, but by no means positive. It is a very serious thing to tell a person he has tuberculosis. Dr. M. R. Taylor coined the words "Pulmonary Asthenia," which covers the above group. It takes care of the abortive case, and does not stamp tuberculosis on an innocent person. Because once a positive diagnosis is made, that person will never be able to leave it behind even if subsequent events prove the diagnosis to be wrong.

It is difficult to state where the case leaves the pulmonary asthenic group and steps over into conditions when a positive diagnosis can be made. This will differ even among examiners of equal experience. Treat the case early by rest, fresh air and good food—then the importance of diagnosis is not so serious. The first important positive single sign is the finding of the tubercle bacilli, and then the most careful examination should be demanded, under the most careful technique. Other signs may indicate a positive condition, among which is pleurisy with effusion, and in 50% hemorrhage plays an important part. Hemorrhage may be the first symptom to call attention to the possibility of a chest infection. The amount of blood does not indicate the extent of the lesion.

In looking for further signs, we find cases presenting medium coarse râles in the upper third of the chest. A positive diagnosis can be made in 9% of cases and 70% will give positive sputum. X-ray is of little value in the asthenic or abortive type, but when there are parenchymatous changes it is of much value. Positive sputum, pleurisy with effusion, hemorrhage of a dram or more, medium coarse râles and the x-ray showing parenchymatous changes, constitute the five cardinal points in diagnosing pulmonary tuberculosis.

The discussion was opened by Chas. W. Youngman, M.D., and continued by Drs. Turner, Kunkle and Shuman. Dr. Charles Cummings spoke words of praise of Dr. Devitt and the work he is doing. Dr. Devitt was requested to give an account of the origin and development of the camp. It started twelve years ago with a few shacks and an outlay of $400.00. At present the camp has 108 patients and the equipment is inventoried at $160,000.

Dr. L. E. Wurster supplemented the subject under discussion by a paper entitled "The X-Ray in Chest Lesions," which was illustrated by stereopticon x-ray slides.

Interesting cases were reported by the following physicians: R. K. Rewalt, J. Gibson Logue—Pyelitis in a Child; J. W. Mann—An Early Experience in Delivering a Child Having Omphalocele; R. W. Crandall—A Case of Follicular Tonsillitis Followed by Lobar Pneumonia and Empyema.

On Friday, July 13th, the Society met at the City Hall, Williamsport. President A. F. Hardt presided. Loyal A. Shoudy, M.D., Chief Surgeon, Bethlehem Steel Corporation, and President of the American Association of Industrial Physicians and Surgeons, was the essayist. The title of his paper was "Injuries to the Hand." He first called attention to the great value of the hand. First aid methods used at the Bethlehem Steel Works were explained. Of all accidents occurring at the steel plant, over 50% were of the hands. Many do not cause loss of time. Severed tendons and cuts in joints cause more or less concern. Benzine or benzol are used in the first cleansing; later diluted tinct. iodin is applied. Good results follow the use of dichloramine. Mercurochrome not preferred. Punctured wounds frequently require tetanus serum. Soap and water in an open wound is good treatment. Wet dressing is preferred, using splints where rest and support is essential. Always keep the injured part warm. Tendon repair must be carefully done and carefully treated.

Contusions are treated with a magnesium sulphate solution. Burns from hot metal cause the most trouble. Bismuth subnitrate, wax and petroleum dressing is used and later mercurochrome. Simple and compound fractures are splinted, with necessary extension. If there is infection of wounds, the result will be delayed and more unfavorable. Prevention of poor results demands early and careful treatment, thorough examination of the injury and the assistance of the x-ray.

Dr. C. M. Adams continued the discussion. He emphasized the importance of every slight injury receiving attention and preventing infection. A good dressing is one that is not applied too tight, but applied loosely. The absolute early control of all hemorrhages was also emphasized.

At a private meeting a request had been made for the appointment of a Milk Commission to certify to the product of milk produced by the Allendale Farms. The committee consisted of Drs. R. K. Rewalt, J. Gibson Logue and Galen Castlebury. The commission made a report of the conditions at the farm and recommended that the commission be authorized to certify to the milk.

Delegates and alternates were elected to the meeting of the State Medical Society.

W. F. Kunkle, Reporter.

PHILADELPHIA

May 28, 1924

The President, Dr. F. Hurst Maier, in the chair.

Dr. Chevalier Jackson: "Observations on the Modern Treatment of Lung Suppuration."—Dr. Jackson said that the modern attitude toward lung suppuration requires that the internist, surgeon, roentgenologist, pathologist and bronchoscopist, and often the anatomist, converge on the problem and in the individual case. Coöperation is necessary for the best interests of the patient. Malignant disease is the cause most frequently overlooked in lung suppuration, and is seldom if ever diagnosed in its incipiency. An exploratory operation in the absence of a diagnosis, which frequently reveals an early malignancy in the abdomen, is not so readily resorted to in the lung. A diagnostic bronchoscopy is invaluable for revealing pulmonary malignancy early enough for surgical cure.

A case was brought to the Jefferson Hospital, a young woman, age 24 years, almost exsanguinated after repeated hemorrhages which she had been having over a period of three years, during which time she had been treated for pulmonary tuberculosis. There was excessive bleeding at the menstrual period. Drs. McCrae and Funk questioned the tuberculous diagnosis and Dr. Manges diagnosed it from the x-ray as a possible malignancy. On bronchoscopic examination there was found below the middle lobe bronchus an area showing infiltration and deformity, with free bleeding. It was diagnosed malignancy and a specimen taken at that time proved to be adenocarcinoma. The growth had at first been endobronchial and confined to a single lobe and an early diagnosis, with lobectomy, would have meant cure. Dr. Gibbon decided the condition inoperable. A pneumonograph was done, with insufflation of bismuth subnitrate which, as predicted by Dr. Manges, stopped the bleeding. After a transfusion and a course of x-ray treatments she is now temporarily in fair health, her extreme condition having been due to hemorrhage, not cachexia.

The bronchoscope is to thoracic surgery as the cystoscope is to renal surgery. By it the source of pus and blood can be determined. Just as the genito-urinary surgeon assigns certain cases for cystoscopic treatment, so the thoracic surgeon finds some cases which are best treated by the bronchoscope. Bronchoscopic aspiration is advisable in any case in which the surgeon thinks that an external operation should be postponed, or where the internist is getting some results without retrogression but with no gain—when drainage through the bronchoscope may turn the tide. There are two defensive mechanisms of the lung, germicidal and germifugal. The germifugal elements are the cough and the cilia. When the pus is foul there must have been stagnation, with the cilia overcome, with granulations causing obstruction and a gap in the cilia. The granulations can be removed bronchoscopically and the cilia restored to function by bronchoscopic aspiration.

The erect posture occurs late, phylogenetically, and fosters bad drainage.

Dr. Jackson then showed slides of the work done in bronchoscopy as an adjunct to medicine and surgery. Several of these showed projectiles, localized by x-ray and pneumonograph and removed by the bronchoscope or operation. Several demonstrated bronchiectatic bronchi, and in one of these the bronchoscope had been introduced by Dr. Clerf and a cautery directed against it from the chest wall by Dr. Shallow, to establish a broncho-cutaneous fistula. Other slides showed abscesses or cavities with fluid levels, subsequently drained through the bronchoscope and cured. No patient has ever been killed with the bronchoscope, although there is always the possibility that the hemorrhage which occurs so frequently in these cases might coincidentally happen at the time of, or after, the bronchoscopic examination. General anesthesia is never used. Local anesthesia may be used for adults; none is necessary for children.

Dr. Howard Lilienthal, of New York: "Surgical Aspect."—Dr. Lilienthal paid tribute to Dr. Jackson's inimitable presentation of his subject and said that in his opinion all cases of lung suppuration or suspicious lung tumor should come first to the bronchoscopist. He cited one case which he had not had bronchoscoped—a woman who ten or twelve days after tonsillectomy began to cough and spit out foul matter. The site was so clearly shown by the x-ray that operation was done at once. The patient died, and autopsy revealed a two-inch piece of bone in the middle lobe bronchus—which probably had caused the cough for which the tonsillectomy was originally done.

Tumor in the lung is frequently not operated until late because of fear of the operation; yet cancer in the lung becomes inoperable much sooner than does cancer of the breast, because of lung suppuration. There are two kinds of lung cancer—that which starts in the bronchus at the second bifurcation, enlarges and interferes with drainage, and that which starts in the parenchyma, irritates by pressure, and is clearly visible by x-ray. Cancer of the lung is not in itself particularly malignant or metastatic; death is due to the secondary breakdown. Early diagnosis is possible in the first type by the bronchoscope, in the second by x-ray, and he has lost no case in which removal of carcinoma of the lung was done.

Abscesses of the lung may arise from secondary interference with drainage by a foreign body (septic or aseptic), by a breakdown of a pneumonic process, or by an embolus. The emboli are carried in in the blood stream and usually multiple abscesses form in the lung and the case is fairly hopeless. There may be a limitation to one part, with a resulting indurative pneumonia. The diagnosis of the inhalation type is not difficult, because of the history of operation or foreign body, but in the parenchymatous type diagnosis is difficult, and should be made before there is rupture into a bronchus. Since the patient is unable to cough out all the material, an operation is necessary, and healing is much slower with a two-way opening. Lung abscess is not a disease of physical signs, but of symptoms—fetor at the mouth, and later, expectoration. If the abscess is of the bronchiectatic type bronchoscopy should always be tried—if unsuccessful, operation—although resection of the lobe of the lung shows 50% mortality. If both lungs are infected a main or secondary bronchus should be drained. Removal of part of the lung with soldering iron has been done, but Dr. Lilienthal has not used this method because of danger of hemorrhage. During the operation there is danger of an air bubble causing a cerebral embolism, and bacterial embolism may occur with or without operation. A study of lung abscess made at Bellevue Hospital, N. Y., covering the years 1918-22, showed that of 169 cases, 40% died and the remainder were discharged unimproved. Certainly this is a plea for surgery. Slides followed, showing cases in which drainage or lobectomy had been done.

Dr. Tucker then showed films at the Bronchoscopic Clinic, demonstrating bronchoscopy, aspiration, irrigation and treatment, and postural (coughless) drainage.

Dr. Judson Daland: "Prevention of Pneumonia and Abscess in Cases Following Tonsillectomy in Adults with Cardiovascular Disease."—Tonsillectomy is seldom followed by serious consequences but should always be considered a major operation. In adults with moderate or advanced cardiorenal, vascular or nervous disease every possible precaution is necessary. There have been many cases of posttonsillectomic pulmonary abscess or suppuration and there are doubtless many cases not reported and much after-following pneumonia not attributed to the operation. The cause is the streptococcus hemolyticus or viridans aspirated into the tracheobronchial tree or reaching the lung through the blood and lymphatics. In a study of 100 tonsillectomies done under general anesthesia, Myerson found blood in the trachea and bronchi in 79 cases, which demonstrates the necessity for an improved operative technic.

Opinion is divided as to general or local anesthesia and ether and nitrous oxid are used respectively in varying sections. Dr. Daland thinks that ether is best for the majority of cardiovascular cases, since it stimulates the circulation when stimulation is most needed. The mildest type of nasopharyngitis calls for postponement of the operation. At operation the patient should be recumbent, with head low. Postoperatively he should be on the side with head so placed as best to further escape of blood and saliva. Blood and infectious material should be removed during the operation by suction. Anesthesia and operation should be done in the minimum time, the patient remaining in the hospital two or more days.

Hemorrhage necessitates prolonged anesthesia, increases local trauma and lessens resistance. Therefore, even though the coagulation time be normal, 10 c.c. of 10% calcium chlorid in redistilled water should be given intravenously on each of the three days prior to the operation. In the syphilitic there should be a preoperative course of neoarsphenamin or mercury until the Wassermann is negative. In senile, asthenic or cardiac cases tincture of digitalis, nux vomica and whiskey should be given for three weeks before the operation. Postoperative distress can be relieved by morphin and atropin. Vaccine therapy may increase the antibody resistance. Strychnin given postoperatively, stimulates the expulsive cough. Where the mortality risk is high a pre-operative local treatment—emptying the crypts with suction and applying iodin—is advised.

Dr. Daland then presented three cases of death from tonsillectomy: (1) Male, age 33, had received antiluetic treatment until Wassermann was negative. During tonsillectomy lost four to six pints of blood in three hours (attributed to syphilitic endarteritis), with death on second day following operation. (2) Female, aged 42, with cerebral thrombus, chronic myocarditis, cardiac decompensation. Death occurred on sixth day, from streptococcic pneumonia. (3) Male, 61 years, with cardiac decompensation, nervous exhaustion, arthritis and anemia, developed pneumonia in both lower lobes and died on the eighth day.

Discussion: Dr. Sidney Yankauer, of New York, said that it was always a pleasure to listen to Dr. Jackson, as he always suggested a new line of thought. Treatment of pulmonary conditions by endobronchial methods of aspiration and local application as practiced abroad had been unsuccessful due to inefficient aspiration. An irrigating fluid (NaCl) is necessary to dilute the thick viscid mucus, and a double cannula should be used in order to prevent the spreading of the suppuration. A lung abscess may be attacked by two methods: 1, enter the cavity, aspirate the contents and inject medication (suction causing pain and occasional hemorrhage, with severe reaction from the medication); 2, direct attention to the surrounding bronchi, since the active process is outside the pyogenic membrane. The pyogenic membrane in the latter group contracts to a solid mass, visible by the x-ray. If the shadow disappears, in all probability there was no well-developed abscess, but rather a localized chronic suppurative bronchitis, which condition yields promptly to bronchoscopic treatment. Upper lobe abscess, especially with pleuritic adhesions, is very difficult to treat endoscopically because of its position and the severity of the reaction when adhesions are torn. The great important future field for bronchoscopy is the diagnosis of intrathoracic conditions for both surgeon and internist. A foreign body unseen by x-ray may be revealed, abscesses located, tumors, both benign and malignant, recognized, and exobronchial conditions discovered, by alteration in the shape, size, motility and position of the bronchial walls.

Dr. Cohen expressed his appreciation of the evening's papers by men, pioneers, who have made history and are international authorities. In one year five cases of posttonsillectomic lung abscess came under his notice and he questioned whether their origin was inhalation or embolic. Fetterolf and Fox, in experiments in animals, showed that the infection which usually caused the lung abscess can be traced down the lymphatics and vascular system from an infected tonsil bed.

Dr. Lowenberg moved a vote of thanks to the excellent speakers of the evening.

Mary A. Hipple, M.D., Reporter.

June 11, 1924

The President, Dr. F. Hurst Maier, in the chair.

MINUTE AND RESOLUTION ON THE DEATH OF DR. LAPLACE

Ernest Laplace, M.D., LL.D., a valued and prominent member of the Philadelphia County Medical Society, was born in New Orleans, July 9, 1861, and died suddenly on May 15, 1924. Dr. Laplace received his A.B. from Georgetown University, Washington, D. C., and the degree of M.D. from both the Medical Department of Tulane University (1884) and the University of Paris (1886). From an early period in his professional career, Dr. Laplace pursued a strenuous existence as professor of surgery in the Medico-Chirurgical College (now the Graduate School of Medicine of the University of Pennsylvania) down to the time of his death. The record of those many years, as made by his life and works, holds the respect and admiration of the members of this society. As the result of his devotion and indefatigable zeal in that position, and special training and ability as an operator and teacher, he was enabled to achieve definite and conspicuous results in the domain of general surgery. He also served some of the leading hospitals of Philadelphia in the capacity of visiting surgeon with distinguished fidelity.

Dr. Laplace was a member of many medical societies both local and national, in all of which he took an active interest and to which he made noteworthy contributions, particularly on the surgery of the brains and intestines. He will long be honored for having invented a forceps for anastamosis of the intestine and for the discovery of the acid sublimate of mercury.

Dr. Laplace was an officer of the Legion of Honor of France and President of the French Society of Philadelphia. The intimate friend of many eminent statesmen and military heroes of France, including Marshalls Joffre and Foch, Dr. Laplace centralized personal efforts for many years upon the promotion of the *entente cordial* between France and America, so that his interests and friendships were not confined to medical circles.

He delighted in mental attrition with his confreres and especially with the younger minds of the profession. To his personal friends Dr. Laplace will be ever remembered for his modest and attractive personality. These attributes enabled him to gain an enviable place in the affection and esteem of medical men as well as of the community. Therefore, be it

Resolved, That the untimely death of Dr. Laplace is a very severe loss to the Philadelphia County Medical Society and a great sorrow to the many members who were his personal friends. Be it further

Resolved, That a copy of the above minute and resolution be sent to the bereaved family.

Committee: Jno. A. McGlinn,
Henry D. Jump,
J. M. Anders, Chairman.

Dr. B. Lipshutz: "The Clinical Significance of Pain."—In diseases accompanied by pain this is the symptom which the patient stresses most, and it may be most baffling or misleading. Imaginary pain hurts as much as real pain. It is through pain that warning is given the lowest forms of life of the presence of a noxious influence. It is an important aid when properly diagnosticated. The nerves of painful sensibility present a difficult problem, those of the surface being more sensitive and more localized than those to the viscera. Afferent impulses from the latter do not enter the consciousness when the organs are functioning normally—there is autonomy in the afferent sympathetic system—but impulses may be sent through and enter the realm of consciousness. The heart muscle is insensitive to pain but the pericardium when inflamed is very painful. Inflammation of the tracheobronchial lymph nodes, the stomach and the splenic flexure, all may cause precordial pain. Localization of diaphragmatic pain depends on the part irritated. The peripheral part receives afferent nerves only from the lower six intercostal nerves. Irritation of the central part causes pain in the neck, which has an embryological basis in the derivation from the cervical myotomes. Contrary to a current belief, the phrenic nerve contains also afferent fibers, as is evidenced in a case of stab wound in the left ninth intercostal space in the mid axillary line, with symptoms of either abdominal or thoracic injury. There was continuous pain over the left shoulder, which was relieved by injecting the left phrenic nerve with a solution of cocain. In inflammation of the pleura, or pericardium, in syphilis of the aorta, in angina pectoris, the pain is referred along the intercostal nerves and gives abdominal manifestations.

Referred pain has an anatomical and physiological basis. The abdominal and thoracic sacs were a continuous chamber in the embryo, both lined with serosa. The oblique course of the intercostal nerves allows branches to three segments of the body; hence the difficult differential diagnosis in thoracic or abdominal injury. The synergistic action of thoracic and abdominal muscles adds to this difficulty.

There are two types of abdominal pain: 1, visceral, or mesenteric, which usually is felt deep in the abdomen; and 2, peritoneal (inflammation of the parietal peritoneum). The visceral pain is usually localized higher than the actual pathology, the afferent impulses running up through the celiac plexus, being referred to the corresponding somatic segments. Tension is the only cause of true visceral pain. Colics are characterized by their sudden onset, sudden pain which subsides suddenly (the free-from-pain interval being a differentiating factor from peritoneal pain), and their tendency to recur. Peritoneal pain is burning, continuous, and localized at the site of the lesion. In convalescence from empyema there is sharp pain. The patient becomes very ill, with temperature 102-4°, pulse increased and respirations shallow and painful. The pain is localized to the lower chest and upper abdomen, there is tympany over the liver, the white cells are increased, and fluid is present. The noxious stimuli push through to the cortex, or there is injury to the paths through which the cortex ordinarily controls.

Pain may arise from apparently inadequate causes, as the headaches in ovarian disturbances, or the renal or gall-stone colics when resistance is worn down.

In discussion, Dr. M. K. Meyers referred to the Dana charts showing how visceral pain is referred to certain sections of the body. Head, of England, has made observations on the parts of the skin affected in visceral diseases. McKenzie has noted which layers of tissue must be observed as causing pain. Behan, of Pittsburgh, has recently published a volume on "Pain," and Pottenger of California a book on "Visceral Reflexes."

In closing, Dr. Lipshutz said that Head, in 1922, was opposed by McKenzie in his interpretation of hyperalgesia of the skin. The relation of tension to pain is important, e. g., in angina when there is decompensation there is a subsidence of angina attacks. When the patient is rested there is a recurrence of pain, the strengthened contraction causing tension.

Dr. James H. Mendel: "Appearance of Drum in Acute Middle Ear Disease."—Dr. Mendel illustrated his talk with watercolor drawings of the right drumhead enlarged 200 times. The membrana tympani lies at the inner extremity of the bony part of the external meatus and separates the external from the middle ear. It is semi-transparent, and lies obliquely from the posterior superior to the anterior inferior. Its longitudinal diameter is 9.5 to 10 mm., the transverse 8.5 to 9 mm. and it is 1/250 in. thick. The membrane is translucent, slightly cloudy, reflecting some light, while some rays penetrate to the middle ear. A 50 watt electric light, reflected, provides the best illumination.

The membrana tympani has an outward concavity though in the anterior inferior part it is convex near the margin before it becomes concave. The drumhead consists of two parts, the membrane proper and the membrana flaccida, or Shrapnel's membrane. The short process of the malleus shows as a small white knob in the layers of the membrane in its anterior superior part and forward and backward from this extend the anterior and posterior folds. There is a third fold running upward and backward, which is a part of Shrapnel's membrane. Downward, backward and inward is the handle of the malleus, with the umbo at the point of greatest concavity of the membrana tympani. The long process of the incus can usually be seen through the drum. The membrana tympani is divided into four quadrants by a line through the handle of the malleus to the inferior margin and an intersecting line through the lowermost tip of the umbo. The quadrants are (1) postero-superior, (2) postero-inferior, (3) antero-inferior, and (4) anterosuperior. The cone of light lies in the antero-inferior quadrant and is a high light, which is least when the concavity is least.

The function of the membrana tympani is to convey sound waves to the ossicles and to keep foreign material out of the middle ear. The membrane proper (membrana tensa, or membrana vibrans) is made up of three layers—an outer cutaneous, mucous membrane, and fibrous tissue with an outer radiating and an inner circular group of fibers. Shrapnel's membrane has no fibrous tissue. Blood vessels lie in the mucous membrane and in the cutaneous layer and anastamose at the periphery. Examination must determine whether or not it is retracted or bulging, and whether or not it is mobile. (Siegel otoscope.)

Dr. Mendel then took up acute otitis media, showing first an illustration depicting subacute catarrhal otitis media, with hyperemic streak along the handle of the malleus, capillary injection of the blood vessels, especially of Shrapnel's membrane, and a pinkish hue to the whole drumhead. The patient complains of fullness and pain in the ear, cracking on swallowing, tinnitus, and occasionally autophony. Acute infections of the nose and throat are the cause in 98%, with extension by continuity from the nasopharynx through the eustachian tube, the caudal end of which closes, preventing drainage. Other etiological factors are diseased tonsils and adenoids, teething, sniffing salt water, acute exanthemata, pneumonia, influenza, exposure to cold. Repeated attacks lead to thickening and catarrhal deafness. This disease is followed by cure in 1 to 10 days or becomes suppurative, with the membrane bulging, inflamed, with the cone of light gone, intense injections along the handle of the malleus and in Shrapnel's membrane and injection of the radial blood vessels. There is intense pain, prostration, temperature 104-5°, headache, and in young children, pulling at the ears. The drum ruptures unless myringotomy is done. This latter operation should be done under general anesthesia with thorough cleansing of the external meatus (2% picric acid in alcohol). The incision should be made posteriorly at the junction of the superior and inferior quadrants and enlarged with a blunt-pointed knife. Suction should then be used and a wick saturated with a 1:500 acriflavine solution inserted. If local anesthesia must be employed, cotton moistened with a solution of equal parts menthol, phenol and cocain alcoholate should be held against the drumhead for 10 to 20 minutes, until the membrane becomes whitish in appearance. A rupture in the postero-inferior quadrant, with circular or oval perforation, untreated leads to chronic suppurative otitis media which finally results in retraction of the malleus, thickening, ankylosis of the ossicles and chronic catarrhal otitis media.

If the mastoid is involved, bulging of the posterior-superior canal wall will be the most constant sign. It may be differentiated from a furuncle by the position of the latter only in the cartilaginous portion and by the absence of the intense pain which occurs with furunculosis on manipulation of the auricle. Postero-superior bulging of the membrana tympani is more common than the central type and is frequently seen postinfluenzal, as a local abscess, with cone of light gone, and with slight hyperemia along the handle of the malleus and in the peripheral vessels. Acute serous otitis media, or hydrops ex vacuo, occurs when a vacuum is created in the middle ear by closing of the pharyngeal end of the eustachian tube. There is retraction, fluid, impaired hearing, tinnitus and a definite fluid level. Acute suppurative otitis media may occur as a deceptive type, the membrane presenting a yellowish gray appearance with cone of light and luster gone, the lower part of the malleus obliterated, the membrana tympani thick and incision yielding a creamy pus.

Dr. Samuel M. Wilson: "Is Tonsillitis Merely a Symptom?"—Tonsillitis is assumed to be a disease, but is it? Is the enlargement and extrusion of secretion, elimination; is it a diseased condition due to irritation of the nasal mucosa, or is it a local infection? Is tonsillectomy a sacrificing of organs that are merely overworked? Dr. Wilson has seen a case where menstruation ceased for two years following tonsillectomy, but replies from a questionnaire sent to gynecologists on the relation between the two have been negative.

What is the use of the tonsils? Are they an important part of the endocrin system; are they a breeding place for germs or does lysis of bacteria occur in them? In infancy the tonsils assist in producing immunity. Do they reverse their process? Tonsillitis may be secondary to a general infection. What is the relation between rheumatism and tonsillitis—which the primary disorder? Tonsillar extract decreases blood pressure and increases the secretion of urine. The tonsils are associated with the generative system. It should be the aim to restore the tonsils to normal rather than to remove them. Pulmonary abscess frequently occurs after tonsillectomy. Is this due to infection by emboli, loss of functioning tonsil, or endocrin disturbance? The hypertrophy of the adjoining lymph glands after removal of the tonsils may be compensatory.

Conclusions: 1. Are tonsils an important part of the adult? 2. Tonsillitis is an incomplete diagnosis. 3. Tonsillectomy has its place but should be performed only after discriminating diagnosis.

Dr. A. E. Oliensis: "The Rationale of Acute Mercuric Chlorid Poisoning and a Simple Method for its Treatment."—There is contradictory evidence from clinical and laboratory studies. After intravenous injection of mercuric chlorid (M. L. D.) in dogs, all efforts to effect a cure by diuresis failed. Only by the prevention of absorption can anything be accomplished. After mouth administration twenty of twenty-five dogs were saved by parenteral salt solution. The relation of acidosis to acute mercuric chlorid intoxication reconciles these views. Excretion is not as important as acidosis. The kidney shows swelling and necrosis of the epithelium in the convoluted tubules, fatty infiltration of the loop of Henle, engorgement of the glomerular blood vessels and by general swelling of the organ, a constriction of the renal vessels. Mercury was found in the blood of dogs ten minutes after ingestion. Therefore antidotes and mechanical removal are unavailing. Failure in the case of intravenous administration was due to the irreparable damage done the body tissues by the acidosis. Where there was aural administration the mercuric chlorid was absorbed into the blood gradually and the parenteral salt solution tended to prevent acidosis. All efforts should be made to spare the kidney.

The treatment of acute mercuric poisoning consists in promoting elimination mechanically as much as possible with milk, egg-white and lavage; in preventing acidosis; in sparing the kidney by limitation of the fluid intake, excluding salt, meat and eggs, giving magnesium sulphate enough to produce two stools daily, and using hot packs; in disturbing the patient as little as possible. The administration of 20 grains of potassium citrate and 30 grains of soda bicarbonate three times a day prevents acidosis. A retention enema of Fisher's solution is given twice a day. Of fourteen cases so treated at the Samaritan Hospital there was only one fatality, and this was a patient who had taken 15 tablets and already had a severe gastro-enteritis.

In discussion, Dr. Morgan said it was best to let the kidney alone, stimulate the bowel and sweat glands and gradually coax the kidney back to function. In bichlorid poisoning the loosely organized sulphid circulates through the body, and just as in lead poisoning the toxins are neutralized by iodids and magnesium sulphate, so the intravenous administration of calcium sulphid, gr. 1 in 1 oz. of distilled and filtered water for every grain of bichlorid taken will anticipate the development of acidosis.

Dr. Jonas questioned when the acidosis occurs, if it is not secondary to nephritis. He thinks that the acidosis occurs late, in the final stages of a nephritis.

Dr. Oliensis said that the cases came in from 10 minutes to 2 hours after ingestion, and he thinks treatment is useless if acidosis is severe. He has found the above amount of alkali sufficient to prevent a pending acidosis. He considers intravenous treatment unnecessary.

Mary A. Hipple, M.D., Reporter.

PENNSYLVANIA NEWS ITEMS

DEATHS

Dr. Lewis Reese, of Philadelphia, aged 54 years, died suddenly on July 5th of heart disease. Dr. Reese was graduated from Jefferson Medical College of Philadelphia in 1899.

Dr. Joseph W. Leadenham, of Franklin, who has been retired from practice, died on July 11th of chronic myocarditis. Dr. Leadenham was born in 1855 and was graduated from Long Island College Hospital, Brooklyn, N. Y., in 1876.

Dr. George E. Robinson, of Philadelphia, aged 34 years, was killed on July 5th near Atco, N. J., when struck by an automobile. He was a graduate of the Medico-Chirurgical College of Philadelphia, class of 1913, and was on the staff of the Frederick Douglas Memorial Hospital. During the World War he served in the Medical Corps, U. S. Army.

Dr. Irwin Justus Moyer, of Pittsburgh, Chief-of Staff of the Mercy Hospital, died suddenly of heart disease on June 30th, aged 66 years. Dr. Moyer was born in Greenville, and was graduated from the Western Reserve University School of Medicine, Cleveland, Ohio, in 1886, and from the University of Pennsylvania School of Medicine, Philadelphia, in 1888. He was a member of the Board of Trustees of the State Society, and was Assistant Professor of Medicine at the University of Pittsburgh School of Medicine.

MARRIAGES

Dr. Michael G. Chadman, of Lancaster, was recently married.

Dr. William E. Delaney, Jr., of Williamsport, and Miss Alice McMullen, of Cumberland, Md., were married on June 18th at Cumberland.

ITEMS

Dr. and Mrs. D. S. Bantley, of Johnstown, announce the birth of a daughter on May 30th.

Dr. and Mrs. L. E. Langley, of Williamsport, recently motored to the Thousand Islands and surrounding points.

Dr. Samuel Zimmerman Shope, of Philadelphia, spent the summer in Vienna and Berlin doing graduate work.

Dr. Jesse Lenker, of Harrisburg, has been doing postgraduate work at the Peter Bent Brigham Hospital, Boston, Mass.

Dr. and Mrs. B. Alexander Randell, of Philadelphia, sailed on July 19th on the Savoy for a several weeks' trip to Europe.

Dr. and Mrs. George Woodward and their family, of Philadelphia, left on July 15th for Camp Bar-None, their ranch at Grovont, Wyoming.

Dr. F. T. Cavill, of Jessup, has returned from a four months' tour of Europe. On his trip he visited many of the principal European cities.

Dr. and Mrs. William F. Mayer, of Johnstown, recently spent two weeks in Boston. Dr. Mayer spent some time in visiting the various pediatric clinics.

Dr. Horace B. Anderson, pathologist at the Memorial Hospital, Johnstown, attended the meeting of the American Pathological Society in Rochester, Minn.

Dr. G. Harlan Wells, of Philadelphia, has been chosen second vice-president of the American Institute of Homeopathy and will automatically succeed to the presidency of that body in two years.

Dr. William G. Turnbull, Deputy Secretary of Health, and for years connected with the State Department of Health, has accepted the position of head of the big memorial hospital to be erected on the Hudson above New York City. His resignation will not be effective until about the end of the year.

Dr. Martha Tracy, Dean of the Woman's Medical College of Pennsylvania, Philadelphia, is on a leave of absence for the purpose of travel and study of subjects relative to medical instruction. Dr. Mae L. Myers, Professor of Histology, will assume part of Dr. Tracy's duties at the school.

Dr. L. M. Otto, Sr., of Williamsport, has in his possession the surgical instruments used at the Valley Forge Hospital by Dr. Bodo Otto, a native of Reading, who has been revealed, after a search of records, as the man who served as surgeon-general of Washington's army during the famous winter campaign of 1777 and 1778.

Dr. and Mrs. W. J. Mayo, of Rochester, Minn., were recently the guests of Dr. H. L. Foss, Surgeon to the Geisinger Memorial Hospital, and a former assistant of Dr. Mayo. Dr. Mayo spent two days at Danville, on the evening of June 13th addressing the graduating class of the Training School for Nurses and presenting the diplomas. On the following day he was the guest of honor at a breakfast given by the hospital staff, following which he attended a surgical clinic conducted by the local staff.

Dr. and Mrs. W. J. Mayo visited the clinic at the Robert Packer Hospital, June 14th-16th. Dr. Mayo was the guest of honor at a banquet given Saturday night for 150 physicians, and during a delightful talk described his recent trip to Australia, reviewed briefly the advances in modern medicine, the problems which confront the profession, and the present-day methods of teaching medicine. Monday morning Dr. Mayo attended a surgical clinic given in the hospital, and talked to a group of physicians present on surgical topics.

GENERAL NEWS ITEMS

In Volume II, Thirty-fourth Series, June, 1924, of the International Clinics, published by the J. B. Lippincott Co., Philadelphia, there is a very good article on "A Clinical Lecture on Osteomyelitis," by Astley P. C. Ashhurst, M.D., which is well illustrated. In view of the national interest of the profession in the surgical aspect of the case of President Coolidge's son, this article is especially timely.

One of the members of the 1924 class recently graduated from Jefferson Medical College of Philadelphia was Prince Fuad Albert Jumblatt of Syria. After Prince Fuad serves a year's internship at the Chestnut Hill Hospital, he will start for his home in Lebanon, Syria, where a member of his family has been reigning Prince since 1750. The present ruler, Rachid Jumblatt, also a graduate of Jefferson, is Prince Fuad's uncle. His father, Nesbid Jumblatt, who was a surgeon in General Allenby's army during the occupation of Palestine, is next in line, and then it will be Prince Fuad's turn to succeed to the throne.

Walter B. Martindell, a Bristol chiropractor, was recently sentenced to pay a fine of $500 and serve six months in the Bucks County jail for practicing in this state without a license. Two years ago, March, 1922, Martindell was arrested on a similar charge and convicted. At that time he was sentenced to pay a fine of $300 which he paid. He appealed the fine to the Supreme Court, but the decision of the lower courts was upheld. In refusing Martindell a new trial after his second conviction, Judge Ryan said: "My duty to the commonwealth and law of this state compels me to send you to jail. I think any intelligent man would realize that the law under which you have been convicted in this state is constitutional, especially so when the highest court of the land upholds the decision."

ATTENTION! FORMER ILLINOIS DOCTORS! ATTENTION!

Will any and all doctors, former residents of Illinois, or descendants of pioneer physicians of the "Illinois country," communicate at once with the Committee on Medical History, Illinois State Medical Society, 6244 North Campbell Avenue, Chicago, Illinois?

Under the sponsorship of the Illinois State Medical Society there is in preparation "A History of Medical Practice in the State of Illinois" that must go to the printer at an early date. In order that this volume may be accurate and complete, all possible assistance is asked from every source, as to personal data and experiences, including diaries, photographs and similar documentary momentoes of pioneer Illinois doctors and of progressive phases of medical practice, as well as of achievements in fields other than those of medical science. Prompt return in good condition is promised for anything loaned the committee, the personnel of which is:

O. B. Will, M.D., Peoria, Ill.
C. B. Johnson, M.D., Champaign, Ill.
Carl E. Black, M.D., Jacksonville, Ill.
George A. Dicus, M.D., Streator, Ill.
James H. Hutton, M.D., Chicago, Ill.
Chas. J. Whalen, M.D., Chicago, Ill., Chairman.

The scope of the volume will range from the discovery of Illinois to modern times. Through this period of over 250 years there is much of thrilling interest to be detailed. Collection of the human interest data can come only from the families or closest friends of the pioneers, many of whom long ago removed to distant sections of the United States. Through the kindness of editors of various medical journals, it is hoped to reach those who may be able to loan valuable material to the compilers who guarantee careful guardianship of anything sent for publication.

Some of the subjects touched will be: Physicians accompanying early explorers; government surgeons and physicians in attendance at the forts; early medicine in Illinois; theories of healing from the days of the aborigines through the mound-builders; French and English explorers; the ante-boundary days; sporadic settlers; medical attendants for the covered wagon; herb doctors; primitive surgery; medicine and missionaries; migration of pioneer physicians to new territory; the "circuit-riding" and "saddle-bag" doctors and their burdens, triumphs and perils; pioneers as "utility citizens"; Illinois men in war time—there are four conflicts to be considered since the opening of the Nineteenth Centry; Illinois medical men away from medicine, i. e., in industry, in science, in belles-lettres—art, music and literature.

Photographs especially are desired. Also copies of letters, statements of "cures" and "new methods," diaries and the like.

OFFICIAL TRANSACTIONS

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Organized 1848 **Incorporated, December 20, 1890**

Seventy-fourth Annual Session of the Medical Society of the State of Pennsylvania

Reading, October 6-9, 1924

PRELIMINARY SCIENTIFIC PROGRAM

GENERAL MEETING

RAJAH TEMPLE: BALL ROOM

Tuesday, October 7, 10 A. M.

Call to order by the President.
HOWARD C. FRONTZ, Huntingdon.

Invocation.
REVEREND C. E. CREITZ, Pastor, St. Paul's Reformed Church, Reading.

Address of Welcome.
HON. WILLIAM E. SHARMAN, Mayor, City of Reading.

Address of Welcome.
HEISTER MUHLENBERG, President, Berks County Medical Society.

Presentation of Program.
THOMAS G. SIMONTON, Pittsburgh, Chairman of the Committee on Scientific Work.

Announcement of Entertainments.
FRANK G. RUNYEON, Reading, Chairman of the Local Committee on Arrangements.

Introduction of Delegates from Other Societies.

Installation of the President-Elect.

No. 1.

President's Address.
J. NORMAN HENRY, Philadelphia.

No. 2.

Address by the President of the American Medical Association. (By invitation of the Board of Trustees.) (20 minutes.)
WILLIAM ALLEN PUSEY, Chicago, Ill.

Wednesday, October 8, 9 A. M.

Stenographer—MISS F. E. DILLAN, Hume-Mansur Building, Indianapolis, Ind.

(Note—Essayists will please deposit original copies of their papers with the Secretary of the Section when they have finished reading them. The printer will not accept carbon copies.)

No. 3.

Postoperative Pulmonary Complications. (Lantern demonstration.) (10 minutes.)
WALTER ESTELL LEE, Philadelphia.

OUTLINE. We suggest that the phenomena of pulmonary collapse of varying degrees, together with pulmonary embolism and infarction, are real etiological factors in postoperative pulmonary complications; that all other factors, such as anesthesia, infection (either pre- or postoperative), preëxisting lung disease, old age and debility, and the chilling of the body are contributory only.

Discussion opened by JOHN H. JOPSON and RALPH S. BROMER, Philadelphia.

No. 4.

The Abuse of Tuberculin as a Therapeutic Agent. (10 minutes.)
ALEXANDER ARMSTRONG, White Haven.

OUTLINE. History and description of tuberculin. Failure to produce cure in pulmonary tuberculosis. Abandoned by practically all who treat pulmonary tuberculosis. Use in so-called surgical tuberculosis. Effect on tuberculosis of glands, bones and joints. Use in tuberculosis of the eye. Danger of lighting up quiescent lesions in lungs or other organs. Results questionable after its use. Cases cited where it has done harm.

Discussion opened by FRANK A. CRAIG, Philadelphia, and CLINTON J. KISTLER, Lehighton.

No. 5.

Relation of Dermatology to Internal Medicine. (10 minutes.) WILLIAM H. GUY, Pittsburgh.

OUTLINE. Overlapping of dermatology and internal medicine is pointed out as an obvious fact. Comments are made on the development of modern dermatology with particular reference to research. Dermatological problems to be solved by coöperative investigation of representatives of all branches of medical science. The status of dermatology in Pennsylvania. Would dermatology and state medicine in general benefit from the establishment of a section on dermatology similar in scope to that of the section of dermatology and syphilis of the American Medical Association?

Discussion opened by FRANK C. KNOWLES, Philadelphia, and LAWRENCE LITCHFIELD, Pittsburgh.

No. 6.

Reconstruction of the Hip Joint. (Lantern demonstration.) (10 minutes.)
A. BRUCE GILL, Philadelphia.

OUTLINE. Reconstruction aims to secure stability and mobility by the formation of a new head or new acetabulum or both. It may be indicated in ununited fracture of neck of femur, destruction of head and neck by disease, congenital dislocation, and ankylosis of the hip.

Discussion opened by J. TORRANCE RUGH and DEFOREST P. WILLARD, Philadelphia.

SYMPOSIUM—HEMORRHAGE FROM THE UTERUS

No. 7.

Hemorrhages of Pregnancy. (Lantern demonstration.) (15 minutes.)
HAROLD A. MILLER, Pittsburgh.

OUTLINE. All hemorrhages occurring within the uterine cavity during pregnancy are pathological. Depending upon the time of appearance, the character of hemorrhage and general conditon of the patient, we differentiate between the different types of hemorrhages, and outline the proper treatment of the individual case. Under no circumstance can such hemorrhages be ignored, nor can the best interests of the patient be conserved without first determining the exact type with which we are dealing.

No. 8.

Uterine Hemorrhage. (Lantern demonstration.) (20 minutes.)
PROFESSOR JOHN OSBORN POLAK, Brooklyn, N. Y. (By invitation.)

OUTLINE. From endometrial changes, from uterine tumors, from adnexal causes. Bleedings during pregnancy, of the early months or the latter months.

No. 9.

Associated Eye Conditions. (Lantern demonstration.) (15 minutes.)
WILLIAM W. BLAIR, Pittsburgh.

Outline. These disorders appear chiefly as affections of the retina and its vessels. Several phases of the same general condition exist; these phases may now be tentatively classified. Suggested classification. Pathology. Suggestions for the early recognition and management of the condition. Importance of coöperation between obstetrician and ophthalmologist essential to proper understanding of the condition.

Discussion of papers No. 7, 8 and 9 opened by John Cooke Hirst, Philadelphia, Raleigh R. Huggins and Edward A. Weisser, Pittsburgh.

Thursday, October 9, 2 P. M.

No. 10.

State Department of Health Papers.

(a) Milk Control in Pennsylvania. (5 minutes.)
Charles H. Miner and Ralph E. Irwin, Harrisburg.

Outline. The Department of Health is interested in providing a safe, clean public milk supply and in the use of more milk. Raw milk should be from tuberculin tested herds and handled by those under medical supervision. Many municipalities are already doing this.

(b) Report of a Large Number of Cases of Anterior Poliomyelitis in Two Families. (5 minutes.)
Edgar S. Everhart, Harrisburg, and Lloyd G. Cole, Blossburg.

(c) Pneumonia as a Principal and Contributory Cause of Death. (5 minutes.)
Wilmer R. Batt, Harrisburg.

Discussion of papers (a) and (c) to be opened by Samuel M. Hamill, Harrisburg, and Carey J. Vaux, Pittsburgh.

No. 11.

Arachidic Bronchitis. (15 minutes.) Observations Based on Over One Hundred Cases. Chalk Talk and Lantern Demonstration.
Chevalier Jackson, Philadelphia.

Outline. Frequency of occurrence. Frequency with which cases of arachidic bronchitis are overlooked. Etiology. Symptomatology. Diagnosis. Prognosis in untreated cases. Prognosis in treated cases. Treatment.

Discussion opened by Willis F. Manges and Thomas McCrea, Philadelphia.

No. 12.

Studies of Endocrine Adiposity. (Lantern demonstration.) (20 minutes.)
William Engelbach, St. Louis, Mo. (By Invitation.)

Outline. Adiposity the most easily recognized sign of endocrine disorder. Classification based upon the etiology, age, incidence and distribution of panniculus. Congenital or infantile adiposity. Juvenile or childhood obesity. Post-adult adiposity. Classical distribution of panniculus adiposis indicating various endocrine disorders. Theoretical consideration of the etiological factors influencing metabolism as a production of types of adiposity. Comparative illustrations demonstrating differential diagnosis. Results of endocrine treatment.

Discussion opened by Solomon Solis-Cohen and Edward J. G. Beardsley, Philadelphia.

SYMPOSIUM—ACUTE PANCREATITIS

No. 13.

The Etiological Factors of Acute Pancreatitis. (Lantern demonstration.) (15 minutes.)
Lyndon H. Landon, Pittsburgh.

Outline. Introduction. Incidence of the disease. More frequent than usually thought. Its association with disease of the biliary passages. Objections to the commonly considered modes of infection. Is the actual invasion of the pancreas by organisms necessary in the etiology of pancreatitis? Anatomical and physiological consideration. The cause of the activation of the trypsinogen in acute pancreatitis. The sources of toxemia. Conclusions.

No. 14.

Medical Aspects. (15 minutes.)
Thomas McCrea, Philadelphia.

No. 15.

The Surgery of Acute Pancreatitis. (15 minutes.)
John B. Deaver, Philadelphia.

Outline. The main considerations in the surgery of pancreatitis are what, when and how. What do we hope to accomplish? When is the best time to operate, and how shall it be done? The prime object is immediate relief from the distressing and threatening acute condition. This is best accomplished by drainage of the pancreas alone. In the fulminating case, dealing with associated conditions at the emergency operation would merely be adding to the operative risk both as to time consumed and the possibility of infection. In the less severe case drainage of the bile passage may sometimes be done by the expert surgeon. It is of great advantage, but the operative procedure should be entirely limited to drainage. Any more radical measures would invite disaster. When to operate. Immediate operation offers the best chance for a cure. The one contraindication may be profound shock, which can usually be combated by active stimulation and saline infusion. How to operate. The approach to the pancreas is best made through an anterior incision, exposing the organ either through the gastrocolic omentum or the gastrohepatic omentum, according to the relative position of the stomach. The pancreas should be carefully palpated and the incision made at the point of collection with blunt instrument, or several blunt punctures can be made, to allow the escape of the contained blood, the lymph and the obstructed secretion. Drainage should be free and direct, consisting of gauze and tube drainage to the surface of the organ and to the abscess cavity when a collection has been present, and conducted to the outside through a protective sheet of rubber dam to prevent adhesions and protect the skin from the powerful pancreatic secretion.

Discussion of papers No. 13, 14 and 15 opened by Stanley P. Reimann, George P. Muller and David Riesman, Philadelphia.

SECTION ON MEDICINE

BANQUET HALL, SECOND FLOOR

Officers of Section

Chairman—Charles Falkowsky, Jr., 327 Spruce St., Scranton.

Secretary—Roy R. Snowden, Jenkins Arcade, Pittsburgh.

Executive Committee—Adam J. Simpson, Chester; Edward J. G. Beardsley, Philadelphia; Howard G. Schleiter, Pittsburgh.

Stenographer—Mrs Irene Hilton Snyder, 1641 Marshall Field Annex, 25 E. Washington St., Chicago, Ill.

(Note—Essayists will please deposit original copies of their papers with the Secretary of the Section when they have finished reading them. The printer will not accept carbon copies.)

Tuesday, October 7, 2 P. M.

No. 1.

Address by the Chairman.
Charles Falkowsky, Jr., Scranton.

No. 2.

Some Factors Influencing the Expectancy in Mitral Stenosis.
James E. Talley and Walter H. Lindsey, Philadelphia.

Outline. The variation in symptomatology and signs in individual cases and in the same case at different times. The influence of recurrent rheumatic and other infections, and of pregnancy. Knowledge derived from postmortem studies. Clinical study.

Discussion opened by F. T. Billings, Pittsburgh.

No. 3.

The Present Situation in the Treatment of Syphilis.
William Allen Pusey, Chicago, Ill. (By Invitation.)

Outline. The consideration of the problems involved in the use of arsphenamine. The dangers which arise from the prevention of the development of resistance by the use of arsphenamine in the early course of syphilis.

Discussion opened by Jay F. Schamberg, Philadelphia.

No. 4.

The Therapeutic Value of a Complete Physical Examination.
Edward J. G. Beardsley, Philadelphia.

Outline. A careful statistical survey was made of a large and varied group of patients, both those seen in private practice and those met with in dispensary and hospital service, to ascertain, if possible, why such individuals were consulting the exponents of the pseudomedical cults in preference to properly licensed physicians. By far the most common complaint voiced against members of the regular medical profession was in connection with their failure to make a careful physical examination of the patient. If we fail to make an examination of a patient seen for the first time, can we justify ourselves as licensed physicians to whose care the state entrusts the health of its citizens?

Discussion opened by Frank A. Evans, Pittsburgh.

No. 5.

The Treatment of Headache.

Arthur C. Morgan, Philadelphia.

Outline. Headache should never be classified other than as a symptom. The causes are many, the degree varied and variable. Its significance may be mild or lethal in tendency. Danger of self-drugging with resulting loss of valuable time in the study of some cases wherein relief might have been secured. Suggestions for study and treatment of individual cases.

Discussion opened by Jesse L. Lenker, Harrisburg.

No. 6.

Parasitic Infections of the Lung.

George A. Clark, Scranton.

Outline. Short historical review. Actinomycosis, with report of cases. Spirochetosis. Technique of routine dark field examination of sputum. Report of cases. Blastomyces. Possible influence of these organisms on chronic tuberculosis and chronic bronchitis.

Discussion opened by W. W. G. Maclachlan, Pittsburgh.

No. 7.

Concerning the Sudden Onset of Symptoms in Brain Tumors, with Report of Illustrative Cases. (Lantern demonstration.)

George Wilson and Nathaniel W. Winkelman, Philadelphia.

Outline. The usual history of a case of brain tumor is one in which slowness of onset plays a prominent part; as a rule months or years elapse before the picture is definite. Recently we have been impressed by a number of cases of cerebral neoplasms in which the onset has been abrupt and stormy.

Discussion opened by D. J. McCarthy, Philadelphia.

Wednesday, October 8, 2 P. M.

No. 8.

The Nonspecific Protein Reaction as an Adjuvant to Endocrine Therapy.

Ralph H. Spangler, Philadelphia.

Outline. Observations based on intramuscular injection of venom protein (crotalin). Solution in cases of epilepsy showing disturbance of the glands of internal secretion. I. Recognition in recent years of the therapeutic value of nonspecific biologic reactions following various protein injections. Factors in the mechanism of the reaction. II. Selection of a satisfactory agent to produce the reaction. Availability of venom protein (crotalin) solution. Its chemical composition and action in animals and humans. Method for regulating strength of dose and frequency of administration. Practical clinical advantages in use of crotalin solution. III. The glands of internal secretion are generally considered to be regulators of metabolism, but conditions in body which activate and control these glands are not definitely understood. IV. Epilepsy as a symptom complex of disturbed metabolism often shows endocrine imbalance. Organotherapy in epilepsy has been widely advocated in the past few years, but its use unaided is frequently disappointing. V. Case reports illustrating the adjuvant effect of venom protein injections, intramuscularly, in conjunction with the oral administration of dried extracts of the glands of internal secretion. Clinical results point to the value of nonspecific glandular activation, following the use of protein therapy, in some disturbances of endocrine function.

Discussion opened by J. N. Boston, Philadelphia.

SYMPOSIUM ON TYPHOID FEVER

No. 9.

Typhoid Fever—the Clinical Diagnosis and Course.

Thomas B. Futcher, Baltimore, Md. (By invitation.)

Outline. Typhoid becoming an unfamiliar disease. Recognition of sporadic cases. Effect of vaccination on clinical and laboratory picture. Course and complications of typhoid. Late effects attributable to the disease.

No. 10.

Treatment of Typhoid Fever.

Lawrence Litchfield, Pittsburgh.

Outline. Prophylaxis; limiting the spread of disease; the three F's; immunization of individuals of community exposed to typhoid by triple typhoid vaccine. Hygiene of doctors and nurses. Causes of death in typhoid estimated: toxemia—50%; perforation—15%; hemorrhage—10%; pneumonia—10%; nephritis—4%; other complications, nitrogen starvation and dehydration. General care of the typhoid patient. Meticulous daily search for complications. Importance of diet, comparison of different diets, requirements for the ideal diet. Specific treatment, vaccine and serum. Convalescence; care of the heart; reëstablishment of the physical efficiency; fat a liability, not an asset.

No. 11.

Public Health Measures in the Control of Typhoid Fever.

Charles H. Miner, Harrisburg.

Outline. Brief history of typhoid fever in United States; investigations of the cause of typhoid during Spanish American War. Former high incidence of typhoid fever in Pennsylvania. Early epidemics. State Health Department organized in 1905. Ninety-two per cent reduction in mortality from typhoid in succeeding nineteen years. Methods pursued by the Department. Unusual outbreaks. Relation between decrease and improved public water supplies. Outbreaks from infected milk, ice cream, water cress, infected wells and springs, contaminated food, fly infection. Typhoid carriers. Antityphoid inoculation. Future plans. Control of disease on dairy farms; pasteurization; control of carriers; antityphoid inoculation; improvement of semi-public and private water supplies.

Discussion of papers Nos. 9, 10 and 11 to be opened by David Riesman, Joseph Sailer, Philadelphia, and C. J. Vaux, Pittsburgh.

No. 12.

The Treatment of Diabetes in Private Practice.

Howard G. Schleiter, Pittsburgh.

Outline. The basis of successful treatment consists in the patient's ability to take care of himself. For this he must understand certain principles of diet, what he may and may not expect of insulin, and certain principles of hygiene, particularly as applicable to his condition. An outline of instructions to diabetics.

Discussion opened by George M. Piersol, Philadelphia.

No. 13.

The Uses of the Roentgen Ray in the Diagnosis of Chest Conditions. (Lantern demonstration.)

John E. Livingood, Reading.

Outline. A historical account of the introduction of the x-ray as a diagnostic aid. Reference to the universal use of roentgenology to confirm clinical findings, and a comparison with clinical findings as a record for determining extent and process of lesion. Applicability of the use of the x-ray in diagnosis of diseases of the circulatory and respiratory systems, in malignant disease and in artificial pneumothorax.

Discussion opened by H. A. Gorman, Hamburg.

Thursday, October 9, 9 A. M.

No. 14.

Gastric Hyperacidity—Its History and Present Status.

Elliot B. Edie, Connellsville.

Outline. The syndrome presented in textbooks thirty years ago was a definite clinical entity, now explained on a different basis. Recent textbook descriptions are confusing. Inquiry into present status involves examination of evidence as to whether actual hyperacidity ever exists and whether variations in acid produce symptoms. Experimental work as recently reported answers these questions in the negative. Same conclusions reached from analysis of clinical work. Should the term "Hyperacidity" be dropped?

Discussion opened by H. L. Bockus, Philadelphia.

No. 15.

Functional Cardiac Disorders.

Alexander H. Colwell, Pittsburgh.

Outline. Etiological factors; consideration of clinical types. Classifications of symptoms and signs. Complexity of problem of treatment. Possibility of cure. Proper conception of underlying causative factors essential as basis for treatment. Prognosis.

Discussion opened by W. H. Mayer, Pittsburgh.

No. 16.

The Early Stages of Cardiovascular Degeneration; Comments on Diagnosis and Treatment.

Charles C. Wolferth, Philadelphia.

Outline. The rank of cardiovascular degeneration as a cause of disability and death. The necessity for detecting it in the early stages. The unsatisfactory state of our knowledge of the early stages. The difficulty of acquiring accurate dependable data. Limitations of our present diagnostic methods. Direction in which progress may be hoped for. The importance of etiology with respect to treatment. Prophylactic and remedial measures to be considered.

Discussion opened by A. P. D'zmura, Pittsburgh.

No. 17.

The Surgical Treatment of Sciatica.

William J. Taylor, Philadelphia.

Outline. Definition of true sciatica. Classification. Those cases suitable for surgical treatment. Technique of operation. Results. Illustrative cases.

Discussion opened by James Talley, Philadelphia.

No. 18.

Chronic Bronchitis.

Thomas T. Sheppard, Pittsburgh.

Outline. Condition divided into a primary and secondary group. The finding of a primary chronic bronchitis rare. Chronic bronchitis accompanying other conditions rather common. Usually accompanies diseases of a constitutional or grave nature. Discussion of pathology and primary causes. Diagnosis. Curative treatment directed to the underlying condition, with symptomatic treatment for the distress from the bronchial involvement.

Discussion opened by Howard G. Schleiter, Pittsburgh.

No. 19.

Systemic Nature of Chronic Infectious Arthritis.

P. S. Hench, Rochester, Minn. (By invitation.)

Outline. Although joint involvement is generally the most outstanding feature of chronic infectious arthritis, a careful study of the entire body will show that there are associated lesions present not only in muscles and nerves but also in other organs. Lowering of gastric acids. Presence of secondary anemia. Reduction of sugar tolerance in certain cases. Cardiac involvement. Occasional toxic-exhaustion psychosis. Consideration of blood pressure and renal changes. Metabolic disturbances. From complete study of body functions certain deductions may be drawn as to the more exact nature of the disease. Certain definite indications for a more complete therapy. Emphasis on arthritic education for the patient.

Discussion opened by Ralph Pemberton, Philadelphia.

No. 20.

The Dick Test and Active Immunization with Scarlet Fever Toxin. Demonstration of the Dick Reaction. (Lantern demonstration.)

(The differentiation between positive and pseudoreactions in both the Dick Test and the Schick test will be shown on a group of children.)

A. Zingher, Assistant Director, Department of Health, New York City, N. Y.

Discussion opened by Walter F. Donaldson, Pittsburgh.

SECTION ON SURGERY

BALL ROOM, THIRD FLOOR

Officers of Section

Chairman—George M. Dorrance, 2025 Walnut St., Philadelphia.

Secretary—James H. Baldwin, 1426 Pine St., Philadelphia.

Executive Committee—William L. Estes, Jr., Bethlehem; Alfred C. Wood, Philadelphia; Elwood N. Kirby, Philadelphia.

Stenographer—Mrs. M. C. Repp, 926 S. 60th St., Philadelphia, Pa.

(Note—Essayists will please deposit original copies of their papers with the Secretary of the Section when they have finished reading them. The printer will not accept carbon copies.)

Tuesday, October 7, 2 P. M.

No. 1.

Address by the Chairman.

George M. Dorrance, Philadelphia.

No. 2.

Methods of Reconstructing the Defective Anterior Abdominal Wall. (Lantern demonstration.)

W. Wayne Babcock, Philadelphia.

Outline. The anesthetic. Use of ethylene. Local and spinal anesthesia. Methods of excision of redundant tissue. Resections of the skin and lipectomy. Dangerous effects of excessive tension upon peristalsis, the circulation, and respiration. Danger from extensive resection of the omentum. Methods of rebuilding the abdominal wall by (a) embedding patient's arm, or flap sliding; (b) layer formation and layer approximation; (c) layer overlapping or imbrication; (d) fascial flap sliding or rotation; (e) fascial interdigitation; (f) introduction of foreign substances. Fascial sutures and transplants of value with limitations. Silver wire or filigree fragments and loses supporting power but is well retained. Fine silver chain or silver chain mesh is stronger and more flexible than silver wire but breaks. Despite breaks it retains much of its supportive power. The support must be elastic, not rigid or unyielding. Treatment of complications; dyspnea and cardiac oppression; ileus reconstruction feasible in nearly every case of defective anterior abdominal wall. Mortality.

Discussion opened by H. J. Donaldson, Willamsport, and C. H. Shearer, Reading.

No. 3.

A Series of Unsuccessful Prostatectomies.

Thomas C. Stellwagen, Philadelphia.

Outline. (1) Those cases in which operation may be ill advised: (a) carcinoma, (b) incompetent kidneys, (c) sweet bladder, (d) cardiorenal syndrome, (e) fibrosis of gland, (f) paralytic bladder. (2) Borderline cases: (a) diverticula of the bladder, (b) encysted stone, (c) papillomata complicating, (d) intolerance of the use of catheter, (e) chronic toxemia. (3) Failures at operation: (a) shock and hemorrhage, (b) perforation of the rectus, (c) excessive trauma of the vesical neck, (d) prolonged anesthesia, (e) improper choice of route, (f) improper choice of one or two stage operation, (g) excessive exposure of the space of Retzius. (4) Postoperative problems: (a) renal shock, (b) circulatory failure, (c) devitalization of patient by prolonged stay in bed, (d) alkaline urine and delayed convalescence, (e) hypostatic congestion, (f) embolism, (g) prostatic remnants.

No. 4.

Suprapubic Prostatectomy in Bad Surgical Risks.

Leon Herman, Philadelphia.

Outline. Facts that tend to make the risk hazardous. Preoperative methods of treatment. Indwelling catheter vs. suprapubic cystotomy. Time of election for prostatectomy. Postoperative care. Conclusions.

Discussion of papers No. 3 and No. 4 to be opened by Charles P. Henry, Reading, and Willard Kinney, Philadelphia.

No. 5.

Surgery's Present Conception of the Clinical Value of Serums and Vaccines in the Treatment of Surgical Infections.

Levi J. Hammond, Philadelphia.

Outline. Has the employment of serums and vaccines in the treatment of surgical infections acquired a just claim to reliability by in any degree modifying the present requirements of surgery? Can the identity of predominant organisms often be determined by the course of the clinical symptoms, or shall serum therapy be withheld until the causal organism has been isolated and cultivated, Are blood changes sufficiently characteristic in every form of surgical infection to enable the bacteriological study to be always reliable.

Discussion opened by John L. Atlee, Lancaster.

No. 6.

Treatment of Chronic Suppurative Osteomyelitis. (Lantern demonstration.)

John H. Jopson and Norman S. Rothschild, Philadelphia.

Outline. Usual etiology of the condition: (a) following acute osteomyelitis from blood infections, (b) compound fractures. Symptomatology and prognosis with special reference to the time required for the separation of sequestra. The x-ray detection of dead bone; secondary bone atrophy. The treatment prophylactic and curative. The first includes the proper treatment of two causative factors; the second, operative treatment, with consideration of appropriate time for operation; bad effects of delayed operation, and the mechanics of radical cure by operation. The last includes removal of sequestra, and "shelf operation," with removal of three-fifths of circumference of walls of cavity. Follow by sterilization and secondary suture if necessary.

Discussion opened by John B. Lowman, Johnstown, and Daniel A. Webb, Scranton.

Wednesday, October 8, 2 P. M.

No. 7.

Surgery in Diabetics. (Lantern demonstration.)

Emory G. Alexander, Philadelphia.

Outline. General remarks. The importance of teamwork between physician and surgeon. The most common surgical diabetic complication—carbuncle and gangrene. The time to operate; anesthetic; operation; amputation; peri-arterial sympatheticectomy, etc.; blood vessel pathology; diet and insulin; acidosis and alkalosis; the prognosis; pre- and postoperative care.

Discussion opened by J. M. Wainwright, Scranton, and John B. Lowman, Johnstown.

No. 8.

Ethylene as an Anesthetic—Its Scope and Limitations.

John R. McCurdy, Pittsburgh.

Outline. History. Physical properties. Purity. Explosibility. Physio-pharmacology in the human. Relative safety. Advantages and disadvantages compared to other agents. Method of administration. Availability.

Discussion opened by J. W. Elphinstone and F. M. Caldwell, Pittsburgh.

SYMPOSIUM ON LOCAL ANESTHESIA

No. 9.

Equipment and Technique for the Use of Local Anesthesia. (Lantern demonstration.)

Robert Emmett Farr, Minneapolis, Minn. (By invitation.)

Outline. The successful use of local anesthesia demands special training, special armamentarium and refined technique. This training relates not only to the surgeon but his assistants and all those who come in contact with the patient before, during and after operation. The technical training of the surgeon is most easily acquired while operating on the average case rather than upon patients who are in extremis. The importance of proper psychic surroundings and a skilled psycho-anesthetist are stressed. Special equipment is desirable. The operating table, illumination, retractors, pneumatic injector and needles are described. Refined surgical technique corresponds to the demands of local anesthesia and the patient's best interests.

No. 10.

Local Anesthesia in Surgery of the Neck.

H. L. Foss, Danville.

Outline. Advantages of local anesthesia in neck surgery, especially in surgery of goiter. The many contra-indications to ether. When local, combined with nitrous oxid and oxygen anesthesia, is advantageous. Gas frequently contra-indicated when local anesthesia alone is the anesthesia par excellence. Why a plan of routine local anesthesia in every case is illogical. The importance of the psychic element and the great frequency with which it is overlooked. Every case a law unto itself and the only logical and scientific plan is to fit the anesthetic to the patient and not the patient to the anesthetic.

No. 11.

Local Anesthesia in Surgery of the Abdominal Wall and Cavity.

Charles F. Nassau, Philadelphia.

Outline. Choice of local anesthesia as a method in selected cases. Scope of availability of the method. Special indications and contra-indications. Choice of anesthetic drug and method of administration. Combination of narcotic drugs with local anesthesia—when and when not to use. Operations that can be done under simple infiltration and those that require paravertebral block or splanchnic anesthesia. Special technique required. Wound healing. Convalescence.

No. 12.

Local Anesthesia in Surgery of the Extremities. (Lantern demonstration.)

R. J. Behan, Pittsburgh.

Outline. Methods of local anesthesia in the extremities: (1) conduction, (2) plane blocking, (3) intravenous. Indications and counter-indications for local anesthesia. Choice of method. Results. Bad after effects. Advantages over general anesthesia.

Discussion of papers Nos. 9, 10, 11 and 12 opened by B. Z. Cashman, Pittsburgh; E. L. Eliason, Philadelphia, and W. A. Lebkicher, Reading.

Thursday, October 9, 9 A. M.

No. 13.

Certain Aspects of the Treatment of Acute Appendicitis. (Lantern demonstration.)

George P. Muller, Philadelphia.

Outline. The question of early vs. delayed operation in late cases. The incision and approach. The management of drainage. Postoperative treatment.

Discussion opened by J. J. Buchanan, Pittsburgh, and Donald Guthrie, Sayre.

No. 14.

Carcinoma of the Rectosigmoid.

Damon B. Pfeiffer, Philadelphia.

Outline. The incidence of cancer of the rectosigmoid. Anatomy with special reference to the lymphatics and blood supply and the paths of metastasis. The ideal operation based upon the above facts and the modifications dictated by questions of location, stage and general consideration of mortality.

Discussion opened by Lever F. Stewart, Clearfield, and William L. Estes, Bethlehem.

SYMPOSIUM ON INTESTINAL OBSTRUCTION

No. 15.

Intestinal Obstruction in Children.

Jonathan M. Wainwright, Scranton.

Outline. Carcinoma of the splenic flexure of the colon in a girl eleven years old. Operation and death. Analysis of the causes of fatal result. Review of the literature and notes on carcinoma of the colon in children.

No. 16.

Acute Intestinal Obstruction.

W. H. Howell, Altoona.

Outline. Toxemia and blood chemistry. The obstruction itself, a secondary consideration. Drainage and later removal of obstruction of more importance. Enterostomy preferred form of drainage. Some rare causes of intestinal obstruction with report of cases.

No. 17.

Postoperative Intestinal Obstruction.

John F. Erdman, New York City, N. Y. (By invitation.)

Outline. Immediate—those following within a few days; remote—those following months or years after the operation. The necessity of early recognition in any type. The type of operation depending upon the period in which the patient presents himself.

Discussion of papers Nos. 15, 16 and 17 opened by E. B. Hodge, J. B. Deaver, Philadelphia, J. P. Griffith, Pittsburgh.

SECTION ON EYE, EAR, NOSE AND THROAT DISEASES

ASSEMBLY HALL, FOURTH FLOOR

Officers of Section

Chairman—Glendon E. Curry, Westinghouse Bldg., Pittsburgh.

Secretary—Nelson S. Weinberger, Sayre.

Executive Committee—William Hardin Sears, Huntingdon; George M. Coates, Philadelphia; Luther C. Peter, Philadelphia.

Stenographer—Miss F. E. Dillan, Hume-Mansur Building, Indianapolis, Ind.

(Note—Essayists will please deposit original copies of their papers with the Secretary of the Section when they have finished reading them. The printer will not accept carbon copies.)

Tuesday, October 7, 2 P. M.

No. 1.

Address by the Chairman.

Glendon E. Curry, Pittsburgh.

No. 2.

Combined Excision of the Tarsus in Trachoma. (Lantern demonstration.)

H. H. Turner, Pittsburgh.

Outline. Not a new procedure but one which has been sadly neglected in this country. It is based upon the hypothesis that it is far better, when the integrity of the cornea is threatened, to excise the diseased tissues and so remove an imminent peril, rather than to allow the condition to run its full course with destruction of these same tissues by inflammatory process, and a permanent loss to economic vision.

Discussion opened by L. Webster Fox, Philadelphia.

No. 3.

Ocular Anomalies and Their Clinical Significance.

Warren S. Reese, Philadelphia.

Outline. The importance of ocular anomalies from a clinical standpoint is emphasized, both as an aid and at times as a hindrance, in arriving at the correct diagnosis of certain cases. The help afforded in the diagnosis of amblyopia by the presence of anomalies is discussed and the importance of anatomical variations in the nasal accessory sinuses and lacrimal apparatus referred to. Optic neuritis and pseudoneuritis are differentiated. Experimental evidence is given for the postulation that some of our clinical methods may possibly produce these anomalies.

Discussion opened by Luther C. Peter, Philadelphia.

No. 4.

Nonsurgical Treatment of Dacryocystic Blennorrhea.

Edward B. Heckel, Pittsburgh.

Outline. Author's conception of what cases should be included under above title. Details of treatment with report of cases and laboratory findings.

Discussion opened by William C. Posey, Philadelphia.

No. 5.

On Treatment of Interstitial Keratitis.

Burton Chance, Philadelphia.

Outline. The symptoms of parenchymatous keratitis are the expression of the local reaction to a systemic infection; the treatment, therefore, must be applied to the elimination of the infection and to the prevention of the consequences of the inflammatory processes within the eyeball. Salvarsan and other organic arsenical preparations have not yielded the results hoped for by their use, and one is compelled in most cases to fall back upon the old remedies and measures, withholding in many instances the so-called specifics.

Discussion opened by William Zentmayer, Philadelphia.

No. 6.

Bullous Keratitis and Its Relation to Sinus Disease.

J. Milton Griscom, Philadelphia.

Discussion opened by William H. Sears, Huntingdon.

No. 7.

Sphenopalatine Ganglion Neurosis.

Fred Fisher, Jr., Erie.

Outline. Anatomical consideration of ganglion and relations to accessory sinuses. Description of symptoms of sphenopalatine ganglion involvement and improved with ganglion injection. Causes of ganglion irritation. (Involvement of Ethmoid, Anterior and Poster Sphenoid, Tonsils, Teeth, etc.) Differentiation from other neuralgias—relief of pain on application of cocain to ganglion. Treatment: (a) Injection of ganglion for temporary relief. Technique of modified and simplified method of injecting the ganglion. (b) Relief of cause of irritation through appropriate general and operative procedure for permanent relief. Report of cases relieved by injection and followed by removal of causes. Conclusions.

Discussion opened by F. Earle Magee, Oil City.

Wednesday, October 8, 2 P. M.

No. 8.

The Practical Application of Foreign Protein Injections in Ocular Infections.

Ben Witt Key, New York City, N. Y. (By invitation.)

Discussion opened by Hunter W. Scarlett, Philadelphia.

SYMPOSIUM ON SYPHILITIC MANIFESTATIONS OF THE EYE, EAR, NOSE, THROAT AND LARYNX

No. 9.

The Eye. George H. Cross, Chester.

Outline. This paper is but one of a symposium having to deal with syphilitic manifestations of the eye, ear, nose, throat and larynx, and is to be confined to the diagnosis and differential diagnosis of syphilitic conditions of the eye and adnexa. In view of the prominence of syphilis as a causative factor in the diseases under consideration—parenchymatous keratitis, optic atrophy, iritis, choroiditis, retinitis, paralysis of recti muscles and tumors—the real interest lies in the differential diagnosis, especially those cases in which syphilis seems to be ruled out until a most careful study reveals the true underlying factor. The most striking case examples of unsuspected syphilitic origin are in the group of tumors and new growths in the lids and orbit, simulating malignant growths.

No. 10.

The Ear. Francis R. Packard, Philadelphia.

Outline. The author considers the manifestations of syphilis as they appear in the external, middle and internal ear, respectively. 1. Syphilis of the external ear is quite rare except in connection with the dermal manifestations of the disease. It might be primary, secondary or tertiary; statistics showing frequency. 2. Syphilis of the middle ear is usually the result of extension from syphilitic lesions in the nose or throat. 3. Syphilis of the internal ear, always tertiary, and most serious in its results. Certain definite characteristics are rapid onset, resulting in total deafness within a very short time accompanied by intense tinnitus. It is occasionally associated with paralysis of the facial nerve. It is unsuspected in many cases in which it exists.

No. 11.

The Nose and Troat.

George M. Coates, Philadelphia.

Outline. Consideration of syphilitic lesions of the nose, septum and accessory sinuses, as well as the nasopharynx, from the standpoint of differential diagnosis. Discussion of the more common forms of syphilitic mouth and pharyngeal lesions and some of the rarer ones, comparing them with similar eruptions on the skin.

No. 12.

The Larynx. (Lantern demonstration.)

Fielding O. Lewis, Philadelphia.

Outline. Diagnosis and differential diagnosis of syphilis of the larynx. Primary syphilis of the larynx is extremely rare and its discussion is here omitted. Secondary manifestations are occasionally observed occurring in erythemia or mucous patches. Tertiary lesions are the ones most frequently seen in the larynx and its early recognition is of the greatest importance on account of the serious consequences which may result. Diagnosis of laryngeal syphilis, when accompanied by general manifestations, may be readily made, but the majority are extremely difficult. It must not be forgotten that a tuberculosis patient may have a luetic larynx; that a luetic larynx may be prolific soil for the development of a malignancy; that a syphilitic subject may acquire a simple catarrhal larynx. It is therefore evident that no hard and fast rules can be tabulated to apply to all cases. The conditions from which syphilis of the larynx must be differentiated are simple catarrhal larynx, tuberculosis, malignancy and lupus of the larynx. The usual means used in most clinics in reaching a diagnosis are (1) complete physical examination, including sputum (if any), serological and urinalysis; (2) x-ray of chest and larynx; (3) biopsy; (4) therapeutic test. Discussion of findings. Report of an unusual case.

Discussion of papers Nos. 9, 10, 11 and 12 opened by Isaac B. High, Reading, and John B. McMurray, Washington.

No. 13.

Chronic Otorrhea with Special Reference to Conservative Treatment in a Series of One Hundred Thirty Cases.

Arthur Wagers, Philadelphia.

Outline. Neglect and inefficient treatment too frequent in early acute stage of disease. Varied pathology in cases studied. Cases in which a mastoid operation had been previously performed. Cases which had not been subjected to any particular operative procedure. General plan of treatment applicable to all cases. Special remedial agents employed.

Discussion opened by S. MacCuen Smith, Philadelphia.

Thursday, October 9, 9 A. M.

Presentation of Cases and Instruments

No. 14.

Bacteriological Analysis of Acute Mastoid Disease. Analytical Report of One Year's Mastoid Operations.

Mathew S. Ersner, Philadelphia.

Outline. (1) Types of organisms isolated. (2) The relationship of the organisms found in the mastoid wound with that of the external auditory canal. (3) Blood clot dressing as a routine, irrespective of organisms found. (4) Sterile mastoid pus and the fallacy of packing mastoid wounds. (5) Utilization of bactericidal and mechanical properties of the blood in closing mastoid cavities with the blood clot dressing.

Discussion opened by Richard S. Major, Pittsburgh.

No. 15.

The More Fundamental Causes of Hay Fever.

Seth A. Brumm, Philadelphia.

Outline. Topographical distribution of hay fever. Do atmospheric and climatic conditions have any influence? Part played by pollens in hay fever. Anaphylactic dysfunction the immediate cause of nasal and pulmonary neurosis. Part played in metabolism by bacterial invasion. Operations and autovaccine as a therapeutic measure.

Discussion opened by Gordon J. Saxon, Philadelphia.

No. 16.

The Treatment of Nonsuppurative Deafness.

James A. Babbitt, Philadelphia.

Outline. The treatment of nonsuppurative deafness. Fatality sequence in an infection of the anterior nares. The control of nasal hemorrhage.

Discussion opened by George J. McKee, Pittsburgh.

No. 17.

The Influence of Focal Infections on the Acoustic Nerve and Its End Organ.

George F. Gracey, Harrisburg.

Outline. Perceptive element in deafness often overlooked. Insidious processes can affect nervous structure connected with hearing. Prevalence of a degree of nerve deafness with presence of infected lymphadenoid tissue. Results of recent studies in deficiency of hearing by precise instruments disclose that lesions of the acoustic nerve and end organ are exceedingly common. Analogy points to these lesions. Vestibular intoxications common. Confirmation of observations of earlier writers. Is the process a manifestation of anaphylaxis? Practical applications and conclusions.

Discussion opened by John R. Simpson, Pittsburgh.

No. 18.

The Nose, Throat and Larynx in Thyroid Disease.

Reid Nebinger, Danville.

Outline. Team work essential in the proper handling of thyroid cases. Careful examination of nose and throat with reference to focal conditions. Nose and throat surgery often the only interference necessary. Pre- and postoperative examination of the vocal cords to determine margin of safety in thyroid surgery.

Discussion opened by Gabriel Tucker, Philadelphia.

No. 19.

Cerebellar Abscess. Report of an Interesting Case, with Description of Therapy as Practiced by Professor Torok of Budapest.

Walter D. Chase, Bethlehem.

Discussion opened by George W. MacKenzie, Philadelphia.

SECTION ON PEDIATRICS

LOUNGE, THIRD FLOOR MEZZANINE

Officers of Section

Chairman—Robert K. Rewalt, First National Bank Building, Williamsport.

Secretary—Horace H. Jenks, 918 Clinton St., Philadelphia.

Executive Committee—J. Claxton Gittings, Philadelphia; Henry T. Price, Pittsburgh; Henry J. Cartin, Johnstown.

Stenographer—Mr. T. F. Arnold, 734 Land Title Building, Philadelphia, Pa.

(Note—Essayists will please deposit original copies of their papers with the Secretary of the Section when they have finished reading them. The printer will not accept carbon copies.)

Tuesday, October 7, 2 P. M.

No. 1.

Address by the Chairman.

Robert K. Rewalt, Williamsport.

No. 2.

Atypical Occurrence of Physical Signs in a Case of Lobar Pneumonia.

John H. West, Easton.

Outline. Boy, age 6. On first day of disease without chill, temperature rose from normal to 104 degrees in six hours. Pulse 138. Respiration 36. From the second to the eighth days temperature averaged between 104 and 105 4-5, with the average pulse of 158, and respiration of 60. Crisis on the ninth day. From the first to the sixth days palpation, percussion and auscultation of chest were negative. Slight cough developed on third day. On the seventh and eighth days a very few fine moist râles, associated with feeble respiratory murmur, were heard at inferior angle of right scapula. On the ninth day after the crisis, frank signs of consolidation were first definitely elicited. Conclusions. (1) Pulse-respiration ratio is of great diagnostic importance, especially in those cases with late appearing physical signs. (2) The first definite physical sign obtained over affected lobe or lobes is often a feeble or nearly absent respiratory murmur.

Discussion opened by Harry Lowenburg, Philadelphia.

No. 3.

Relation of Baby Welfare Work to the Physician.

George W. Overholser, Reading.

Discussion opened by Robert M. Alexander, Reading.

No. 4.

Congenital Luxated Hip. (Lantern demonstration.)

William Jackson Merrill, Philadelphia.

Outline. Recognition should be made of typical cases immediately after birth. Examination made by person of experience to be sure of anatomical conditions. If there is any doubt as to anatomical variation, x-ray should be made to settle this question. Reposition is imperative at the earliest possible moment; that is, if the child's general condition warrants, and restriction of the extremities will not interfere with its development, treatment to begin a few weeks after birth. The presence of the head in the acetabulum, the institution of the function of the joint, the resistance to the normal pull of the muscles when the head is in the joint are factors, as well as the extremities. After reposition of the head in the acetabulum, abduction with the proper rotation should be made over a period of 18 to 60 months; that is, if the bone structure has been sufficiently rehabilitated to bear weight without yielding.

Discussion opened by Clement R. Bowen, Philadelphia.

No. 5.

Preliminary Report of a Study of Infant Mortality in a Certain Community.

John D. Donnelly, Harrisburg.

Outline. Purpose of study. Comparison of infant mortality rate, birth rate, foreign population and illiteracy by counties with special reference to town studied. Analysis of death. Chief factors causing mortality. Coöperation plan for lowering infant death rate. Reactions met. Progress to date.

Discussion opened by Henry T. Price, Pittsburgh, and continued by Wilmer R. Batt, State Registrar, Harrisburg.

No. 6.

Suppurative Pericarditis in Children.

William N. Bradley and A. C. Wood, Philadelphia.

Outline. Its comparative frequency, causative factors; difficulty of recognition clinically, and frequency with which it is overlooked as evidenced by postmortem findings; x-ray interpretation; operative procedures; report of case successfully treated.

Discussion opened by John H. Jopson and J. C. Gittings, Philadelphia.

Wednesday, October 8, 2 P. M.

No. 7.

Treatment of Subacute and Chronic Bronchitis in Childhood.

Maurice Ostheimer, Philadelphia.

Outline. The causes for the failure of a child to recover promptly from an ordinary acute bronchitis are over-housing, over-covering or over-clothing, and the lack of sufficient fresh air and sunlight. Treatment should consist in feeding the child well, in keeping the child out of doors or in well-ventilated rooms (with windows open top and bottom), in not covering or clothing the child too much, in daily baths, ending with a cool wash-cloth and a rub-down, in the proper regulation of exercise and of rest, and in the administration of the syrup of iodid of iron (in summer) or of pyrophosphate of iron with cod liver oil (in fall, winter and spring).

Discussion opened by Charles H. Fife, Philadelphia.

No. 8.

The Diagnosis and Treatment of Enlarged Thymus. (Lantern demonstration.)

George W. Grier, Pittsburgh.

Outline. Relative frequency, especially in the newborn. The importance of x-ray examination in diagnosis. Results by radium treatment.

Discussion opened by Harold A. Miller, Pittsburgh.

No. 9.

Hydronephrosis in Childhood. Report of Case.

Alvin E. Siegel, Philadelphia.

Outline. Definition of hydronephrosis. Congenital. Acquired. Unilateral. Bilateral. Etiology. Pathology, Symptomatology. Diagnosis. Discussion of case.

Discussion opened by Russell Richardson, Philadelphia.

No. 10.

An Adynamic Type of Peritonitis Seen in Debilitated Infants and Children. (20 minutes.)

John Foote, Washington, D. C. (By invitation.)

No. 11.

Fat; Its Advantages and Disadvantages in Infant Feeding.

J. P. Crozer Griffith, Philadelphia.

Outline. (1) The importance of the presence of fat in the diet of infants. (2) The dangers from the use of fat. (3) The substitution of other elements for fat.

Discussion opened by Alfred Hand, Jr., Philadelphia.

No. 12.

Nephritis in Childhood.

J. Gibson Logue, Williamsport.

Outline. Present day classification of nephritis. Symptomatology of definite types of nephritis. Etiology of nephritis. Clinical diagnosis. Prognosis of various types.

Discussion opened by Howard Childs Carpenter, Philadelphia.

Thursday, October 9, 9 A. M.

No. 13.

Congenital Syphilis.

A. Dattner, Wilkes-Barre.

Outline. The importance of a Wassermann reaction in the infant, and the importance of not accepting a negative Wassermann in the mother and father as against the diagnosis of syphilis in the infant.

Discussion opened by P. Mayock, Wilkes-Barre.

No. 14.

Paranasal Sinusitis in Children. (Lantern demonstration.) (Exhibition of selected specimens.)

Warren B. Davis, Philadelphia.

Outline. Consideration of extent of average sinus development found in children. The frequency and types of infection found. Mechanical obstruction as an etiologic factor. Other causes of infection. Cases in which conservative plans of treatment are usually satisfactory. Some conditions necessitating more radical procedures.

Discussion opened by James A. Babbitt, Philadelphia.

No. 15.

Diagnosis of Tuberculosis in Children. (Lantern demonstration.) (20 minutes.)

Charles Hendee Smith, New York City, N. Y. (By invitation.)

No. 16.

Acute Infections of the Middle Ear in Children. (Illustrated by the author's paintings.)

James H. Mendel, Philadelphia.

Outline. The purpose of these paintings is to present the exact appearance of the drum-head in natural colors, starting with the normal and taking up in progression the acute pathological conditions.

Discussion opened by S. MacCuen Smith, Philadelphia.

No. 17.

A Statistical Study of St. Vitus' Dance.

Charles W. Burr, Philadelphia.

Outline. Occurrence in family. Frequency of other illness preceding. Incidence of rheumatism. Effect on after life.

Discussion opened by J. Claxton Gittings, Philadelphia.

No. 18.

Supervision of the Dairy Herd is Necessary to Prevent Some Anaphylactic Symptoms in Infant Feeding.

H. O. Rohrbach, Bethlehem.

Outline. Anaphylaxis and idiosyncrasies. Familial disease symptoms. Some symptoms in infant feeding due to milk. Such symptoms corrected by dairy feed. Examples.

Dr. O. Pine queries: Why bark and snarl more viciously at the Volstead Act than at its transgressors?

Dr. O. Pine queries: Why not plant a "No Parking" sign before free clinic palaces to shoo away the patronizing Rolls-Royces?

Dr. O. Pine queries: We are informed that there are too many doctors, too many surgeons, too many nurses. But are there too many good ones? How can there be too many good necessities?

Dr. O. Pine queries: Occasionally we have seen a great surgeon provoked to display intemperate displeasure with the service of his operating-room subjects, but would he not have been greater if he could have exhibited self-control? "One may conquer a thousand thousand men in battle, but he who conquers himself alone is the greatest victor" (Buddha).

Dr. O. Pine queries: Judging from great lamentable examples of the past, should not the medico of to-day be exceedingly cautious in denouncing what may appear to him as an illogical innovation? Even if he is "up-to-date," may not the innovator be "ahead of today?"

Dr. O. Pine queries: Would it surprise you very much if a "Radio Medical School" should arise, and drive us all out of the profession?

Dr. O. Pine queries: When you have made an unappreciated midnight visit to some exceedingly selfish egotist, why not apologize for not having been wide-awake and dressed so that you could have arrived a few moments earlier than you did, for the larger the beast, the closer should be the attention given?

Dr. O. Pine queries: After you have arrived, or think that you have, why hoist the standard of *ne plus ultra,* and deliberately and persistently stand still?

THE

MEDICAL SOCIETY OF DELAWARE

ORIGINAL ARTICLES

FACTORS RESPONSIBLE FOR THE SUCCESSFUL TREATMENT OF GALL-BLADDER DISEASE*

H. M. ARMITAGE, M.D.
CHESTER, PA.

"The diseased gall-bladder belongs to the patient."

Trite, flat and obvious as this oft-repeated statement of Kocher seems, there is still much discussion relative to gall-bladders that belong to the surgeon and gall-bladders that belong to the internist.

To elucidate this epigramatic utterance Kocher appended the thought that if the patient with a diseased gall-bladder elects to go through life as a semi-invalid, with the indigestion and pain which accompany this disease or even endure with fortitude the occasional attacks of colic, then that patient should be made as comfortable as possible with drugs and sanitarium treatment; but if the patient elects, on the other hand, to be free from the symptoms, surgery should be resorted to, and the earlier the better.

Bad surgical results in these cases are due to two causes: (1) operation at a late period when the surgery cannot be limited to the gall-bladder but must include the ducts; (2) defective surgery.

DIAGNOSIS OF EARLY CHOLECYSTITIS

The diagnosis of cholecystitis in its early stages depends almost entirely upon clinical findings, although I believe that we are sadly in need of laboratory methods which will aid us and any new laboratory evidence is consequently rapidly seized by the profession. However, it should be understood that any laboratory aid known at the present time is simply a cloak of mystery which should be tossed aside. It is a threadbare garment.

In 1919 Lyon propounded a relatively easy laboratory method for the diagnosis of disease of the biliary tract based upon the fact that magnesium sulphate relaxes the sphincter of Oddi and by contrary enervation contractions of the gall-bladder took place. Meltzer had suggested that magnesium sulphate might cause relaxation of the sphincter of the common duct.

Many conflicting opinions and much experimental work ensued. Supporters of the method, as Sachs, Smithies and Brown, were firm in the conviction that the method was of value in the diagnosis and treatment of diseases of the gall-bladder and ducts. Other investigators, notably Fitz and Aldrich, Hartman, Dunn and Connell, Luckett and Lutz, Cutler and Newton, varied in their opinions from flatly condemning the method to being doubtful as to its practical application. Crohn asserts that Meltzer never claimed magnesium sulphate relaxed the sphincter of Oddi and caused contraction of the gall-bladder. Lyons' method depends upon physical, cytologic and bacteriological studies made upon the bile obtained by the method which he has described. Dunn and Connell describe the same display of colors in the bile obtained from a patient deprived of the gall-bladder.

Studies conducted at the Mayo Clinic under Hartman have convinced him that it is impossible to sterilize the stomach, duodenum or mouth, and they were able to grow bacteria from the mouth and those obtained by the tube in dextrose-brain broth to which had been added various strengths of the antiseptics recommended for cleansing and sterilizing the mouth, eosophagus and stomach. They believe the principle of the process is false from a bacteriological point of view. Bile from a case of cholecystitis is often sterile because the infection and reaction are in the walls of the gall-bladder. Only in acute cholecystitis or in acute exacerbations of chronic cholecystitis are the bacteria present in the bile. Organisms were found in the bile in only 19% of the gall-bladders removed at operation (Drennan).

All credit should be given Lyon for his sincere and stimulating work in this field, which has concentrated attention upon the physiologic study of the liver and pancreas, but it must be conceded by the warmest advocates of this method of diagnosis that the conclusions arrived at are only very general in the diagnosis of chronic cholecystitis.

At any rate, the theory that infection of the gall-bladder is due to an ascending infection from the duodenum fails to explain the frequency of cholecystitis as a sequel to infection of the appendix. Hematogenous infection of the gall-bladder is, I believe, the most commonly accepted hypothesis; and infection of the liver through the portal vein following appendicitis, with consequent hepatitis, setting up an infection of the gall-bladder through the lymphatics, is a most logical corrolary.

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*Read before the New Castle County Medical Society. Wilmington, February 19, 1924.

We are forced to rely upon the time-honored clinical methods for a diagnosis. The patient cannot be sent off on a round of impersonal laboratory tests nor can the physician shun individual responsibility.

A word should be said regarding x-ray in the diagnosis of gall-stones. While some roentgenologists claim that they are able to demonstrate gall-stones frequently, other men of equal standing, notably Carmen, disagree with this claim. At any rate, there are many diseased gall-bladders which do not contain stones.

In my own experience the x-ray has been of little value in the diagnosis of gall-bladder disease. It has, however, played a wonderful part in the extension of gastric surgery, and by demonstrating positive lesions in the stomach or duodenum has been of considerable value in aiding us to make a decision as to whether the indigestion was due to extrinsic causes or intrinsic disease of the stomach.

The reactions to an attack of cholecystitis are the systemic symptoms noted in any inflammatory process, while the reflex symptoms are gastric. Appendicitis gives almost the same symptoms, aside from the localizing evidence of the disease, but the two conditions occur so often together or in sequence that they may for all general purposes be considered as one disease.

What clinical signs are of any value in early cholecystitis? I firmly believe that there is certain clinical evidence which may be adduced that will definitely diagnose gall-bladder disease.

Possibly these symptoms are so simple that the physician thinks them to be of no value. At any rate we know that patients are constantly treated as dyspeptics when they have a typical syndrome of gall-bladder symptoms.

Do not wait until the patient is "fair, fat and forty." It has been absolutely proved by Alvarez that "fair, fat and forty" is just 19 years after the gall-bladder should have been removed. Operation at this late period will warrant the more appropriate dictum "fair, fat, forty and fatal."

The first point to determine is whether this patient has intrinsic or extrinsic disease of the stomach. If he has peptic ulcer, syphilis of the stomach or gastric carcinoma, a carefully taken history, together with fluoroscopic studies and possibly a gastric analysis will as a rule readily make a correct diagnosis.

If he has extrinsic disease of the stomach, our first duty will be to exclude the gastric crises of tabes, which is easily done. If he complains that food easily satisfies him or in other words, that after sitting down to a well-cooked meal, expecting to enjoy himself, he suddenly pushes the chair back satisfied, we should then elicit the other symptoms of value. If he finds that food which formerly agreed now disagrees, or if he does eat the meal and is suddenly and acutely nauseated or in 15 to 30 minutes has sour regurgitations and belching with accumulations of gas in the stomach, *that patient has cholecystitis.*

To epitomize, we may say that the symptoms are: (1) early satiety of food; (2) intolerance to food which formerly agreed; (3) accumulation of gas, belching and sour regurgitation occurring in 15 to 30 minutes after this ingestion of food; (4) sudden acute nausea and vomiting.

A little emphasis should be placed upon the time, 15 to 30 minutes, that food begins to disagree after it is ingested. Functional gastric disease causes distress immediately after a meal, and chronic appendicitis in two or three hours. Ulcer, of course, should be excluded.

If to the symptoms described, we find localized tenderness, indicating an inflammatory process, our diagnosis is certain. The colic of gall-stones, which is in reality inflammatory, can hardly be mistaken and needs no discussion.

It is well to remember that as the disease advances we may have involvement of other organs in the diseased process, with symptoms referable to them. The gall-bladder, liver and pancreas are like three apples on a main stem—the common duct. When one rots, the others rot, and the parasite most commonly causing the premature decay is the appendix.

The cure for a diseased gall-bladder lies in surgery, since the disease is in the walls of the gall-bladder, but as the physician sees these cases in all stages of involvement, the advice as to the time of operation, the method of preparation of the patient and the type of operation are matters of great importance if that patient is to be guided safely to recovery.

PREPARATION OF THE SEVERELY JAUNDICED PATIENT

Recent advances made in the preparation of the jaundiced patient are extremely interesting. The mortality rate is very high in this type of patient regardless of the skill and judgment of the surgeon; hence the careful pre-operative care.

We are indebted to Walters for a careful study of the preparation of these patients and he bases his conclusions upon the end results in thirty-four cases. The tendency is great for the jaundiced patient to develop fatal postoperative hemorrhage. In 1921 Bell and Walters presented a suggested régime based upon the fact that calcium chlorid in small doses injected intravenously reduced the coagulation time of the blood to approximately normal limits in the majority of instances and prevented the occurrence of postoperative bleeding. This has been demonstrated experimentally by Lee and Vincent and clinically by Wright and Walters. Five c.c. of a 10 per cent solution of calcium chlorid in redistilled water is given intravenously daily for three days. Large quantities of carbohydrates are given by mouth and glucose solution by proctoclysis in order to increase the supply of glycogen to the tissues of the jaundiced patient. Opie has shown this to be the needed food for toxic cases and Mann has proved its value in patients with liver deficiency. Large quantities of water by mouth increase the body fluids and help to eliminate bile pigments. Hemostatic serum has apparently given good results in our hands, in increasing the coagulability of the blood but the results have been variable. As a matter of fact, we are working with variables, not constants, which is more or less confusing, since we have never been quite sure that the variation in the jaundice has not controlled the coagulability of the blood as much as the serum. The use of calcium chlorid intravenously is founded upon scientific data proved experimentally and clinically in constant jaundice so that its adoption should be quite general in these instances of lowered coagulation time of the blood. We have adopted as a routine the exhibition of large quantities of carbohydrates and water by mouth, with glucose solution by rectum, regarding it as a most important part of the preparation of the jaundiced patient for operation.

CHOICE OF OPERATION

When the gall-bladder is diseased I believe removal to be the preferred method. Hence in our hands cholecystectomy is practiced where the disease is confined to the gall-bladder, and we are positive in the belief that recurrence of symptoms has been markedly lower than when we formerly performed cholecystostomy. I believe where the gall-bladder is removed easily, when bile does not spill over the field and if hemorrhage is absolutely controlled, that no drainage should be left in the peritoneal cavity. In fact, it has frequently been our custom to close these cases without drainage and our results are better, with regard to postoperative recurrence of symptoms, than by any other method. If drainage is to be omitted it is not enough that the cystic artery, which bears the same relation to the cystic duct as a string to a bow, should be ligated, it is necessary that every bleeding point should be controlled. In other words, your field should be so dry that it is dusty.

Many masters of biliary surgery invariably leave in drainage. In observing these men work, there appears to be a very logical reason for this. The more experience a man has in surgery of the gall-bladder and ducts the more he will explore the ducts, which very often results in contamination of the operative field, requiring drainage.

As we have said before, cholecystectomy is to be preferred where the disease is confined to the gall-bladder, but there are instances where cholecystectomy, while the preferred operation, is too dangerous: for instance in the very fat patient with a high liver, where removal in the cavernous depths would endanger the patient's life, likewise in aged or weakened patients where the operative risk is great.

Surgical judgment founded on experience must be relied upon for decision in these patients, and I suppose the surgeon will always here, as elsewhere, at times decide upon a certain operation and, suddenly finding himself in a hand-to-hand conflict with hemorrhage, regret that he did not perform the less radical operation. As experience increases, however, what we were once wont to look upon as a malign destiny assumes its humble place as an error in surgical judgment.

When the disease has advanced to the ducts with stone in the duct, cholecystostomy with drainage of the common duct is to be preferred. Who can foretell the amount of trouble resulting from infection of the ducts? All our bridges should not be burned behind us and the gall-bladder should be preserved because, if removed and secondary operation becomes necessary, as is frequently the case, we will be forced to navigate an uncharted sea and it is a difficult task to find the common duct by dead reckoning in a sea of adhesions. In these cases, rotation of the duct and incision through the adhesions down upon the stone has been my choice.

In some instances where we believe cholecystostomy to be the safer operation, we are forced to remove the gall-bladder because it is so gangrenous that it tears low down near the cystic duct while we are attempting to straighten the common duct out by traction for removal of a stone impacted low down. In these cases we have been in the habit of splitting the gall-bladder and allowing the wall of the gall-bladder to remain where it is, attached to the liver, removing the mucous membrane however. This prevents oozing from the liver and the opening up of fresh surfaces for absorption when pus is present in the gall-bladder.

Cholecystectomy is rarely indicated in severely jaundiced patients, because removal results in hemorrhage from the liver at minute points which ordinarily would not bleed. This bleeding occurred as late as four weeks after operation in one of my cases, and finally resulted in the death of the patient. The liver should not be rotated from the wound where jaundice is present, owing to the tearing of the edge of the liver, with consequent oozing.

Cholecystostomy, then, in our opinion, has a very distinct place in gall-bladder surgery although we think cholecystectomy gives better results where the indications allow it to be performed.

CONCLUSIONS

1. Cholecystitis should be recognized in its early stages, but we must still rely upon our old clinical methods.

2. The cure for a diseased gall-bladder lies in surgery.

3. The bad surgical risk due to severe jaundice should receive calcium chlorid intravenously, and the assimilation of large quantities of water and carbohydrates before operation.

4. Cholecystectomy is the operation of choice when the disease is confined to the gall-bladder.

5. Cholecystostomy is to be preferred where the ducts are involved in the diseased process.

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EDITORIALS

THE MODERN TREND IN MEDICAL EDUCATION

Reforms swing like the pendulum of a huge clock. The imagination of the reformer carries him far beyond practical life, into the realm of "what ought to be." The reformer is essentially a "romancer." His ideas are visionary, his people unreal. By the force of his own convictions and enthusiasm, he carries the common people with him. They act as a ballast to his upward flight. In time the ballast becomes too heavy, and the machine falls crashing to the ground. This is the story of every reform movement, and it will be thus with the reforms in medical education.

From a three-winter course, consisting mostly of didactic lectures, twenty-five years ago, we have progressed into an eight-year course: two years premedical, four medical, and, usually, two years hospital internship. Quite a number of the Class-A schools are demanding a full college course for entrance, which adds another two years to the already long training.

And yet, as Dr. McCarthy, of the Mayo Clinic, brought out in his address before the American College of Physicians at the St. Louis Congress, the students from our best Class-A schools "know a great deal, most of which is not very profound, and little of which is perfectly clear, concise and complete. There is no form in their knowledge: the composition, speaking in terms of the artist, is not good. Its practical utility is questionable despite the many years of preparation and the rigorous standards they have passed." A student complained to Dr. McCarthy: "I am spending so much time going to school, I have no time to learn." Another, a graduate of a Class-A school, said: "Is it not too bad that we spend so many years studying medicine and then are not fit to practice?"

This is only too true. The graduates of our very best medical schools are found woefully deficient in their ability to recognize and treat common ailments, and know next to nothing of the acute eruptive fevers, unless they happened to be interned in hospitals for contagious diseases. They have a disjointed, disoriented knowledge of the modern advances in medicine; know, but lack the skill to perform the various intricate laboratory tests on which they depend for diagnosis, and are as helpless outside of a hospital environment as a fish is out of the water.

The results of this overtraining are self-evident: First, the high cost of a medical education makes it almost prohibitive for any but the children of the rich. Dr. Niles, dean of Cornell

University Medical School, in advising against encouraging the "poor boy" to study medicine, points out that "in the medical curriculum there are very few unoccupied hours during the day time and that we require so much of our students that their entire energy and time is necessary for them to get what they should from the instruction offered." He points out further that "every student costs the school or university from five hundred to one thousand dollars annually in excess of the tuition fee," and, he argues, "it becomes apparent that we cannot afford to accept any whose preliminary training has not been of the best, or who are unable to devote all of their time and energy to taking advantage of the opportunities which are presented to them." If this condition keeps up, medicine will become a plutocratic profession within reach only of Wall Street magnates or bootleggers.

Second, the lack of practical knowledge scares our young graduate away from the country, where he would be obliged to work on unfamiliar ground and to depend on his own resources. He has been accustomed to a hospital environment, to assistance from chiefs and laboratories, and naturally feels lost without these aids. Unprepared as he is for general practice, he looks towards specialization as the only safe haven.

Finally, this ultra-academic medical education is in a large measure responsible for the spread of quackery and medical cults. While the bars are being raised at the front entrance, thousands of young men and women enter the domain of medicine by the back door. "How few of the students I see," says Dr. McCarthy, "want to do general practice, and how many want to be consultants or great surgeons immediately! This common attitude of our medical graduates explains, perhaps, the rapid increase in the number of osteopaths, chiropractors and Christian Scientists; these practitioners are certainly caring for the people who were formerly attended by our faithful old general practitioners."

It is time to "Stop, Look, and Listen," and if need be, to reverse our gears and go back to the road of common sense. A. R.

PERSISTENT HICCOUGH

Few conditions that seem at first trivial can be as annoying and even alarming if persisted in as hiccough. This is especially true in postoperative hiccough. It is seen oftenest in ileus, either obturator or paralytic, and next oftenest in drained abdominal cases without ileus. It probably occurs oftener after ether than after chloroform or gas; it is much rarer after local or spinal anesthesia. However, it has been our recent experience to encounter a case that hiccoughed for seven days after a perineal prostatectomy done under spinal (procain) anesthesia. The patient was an arteriosclerotic of 72, with a mitral insufficiency and a mild chronic interstitial nephritis. He had been living a catheter life for six years without incident till this spring, when he was admitted to the hospital for an abscess of the right epididymis, which healed kindly after incision and drainage. Prostatectomy was indicated, but his general condition necessitated some six weeks of preparation before the major operative procedure seemed justifiable. Finally, the blood pressures and kidney function tests becoming stationary at the proper level, the operation was done, two grains of procain being injected into the fourth lumbar space. He was returned to the ward in excellent condition.

The next day the hiccough began, the spasms coming at intervals of barely one minute, and thus they persisted for seven days, till it began to appear that death from exhaustion was imminent unless they could be stopped. Almost everything in the pharmacopœia recommmended for this condition had been tried, especially atropin, adrenalin, morphin, heroin, amyl nitrite, chloral, bromides, cocain, veronal and luminal. Digital pressure on the trunks of the neck was ineffectual, as were small inhalations of ether and chloroform. Finally, as an almost last resort, benzyl benzoate in large doses was given, and within twenty-four hours the hiccoughs had stopped, and never returned. It seems remarkable that this drug should have turned the trick when ether and chloroform failed. In another case we would advise giving the succinate, 65% of which is benzyl radicle, or the fulminate, 68% benzyl radicle, rather than the benzoate, which is only 61% benzyl radicle.

Such cases are fortunately rare, and most of them respond to treatment of one kind or another before the symptoms become alarming, but for the persistent case that defies the other remedies we suggest that benzyl preparations be tried.

W. E. B.

MISCELLANEOUS

HUMBUGGERY A LA ABRAMS

The gullibility of the American (and world) public is almost proverbial; we are about convinced that Barnum was right when he said that every sixty seconds saw the advent of another sucker. This time it is evidently the "ERA" that

(Continued on page xiv.)

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ORIGINAL ARTICLES

SOME CONSIDERATIONS REGARDING DIAGNOSIS AND TREATMENT OF PERNICIOUS ANEMIA*

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The clinical description of Addison, supplemented by certain additional features added in recent years, distinguishes with considerable certainty from other forms of anemia that which has been named pernicious anemia, when we have in mind typical and pronounced instances of this disease. Unfortunately, these clinical characterizations furnish no clue to the real nature of the disease and leave us, therefore, helpless to define it in such a way that cases not pronounced nor typical may be distinguished with certainty from other anemic conditions. The ultimate criterion of Addison—the apparent causelessness of the anemia—still a feature of value in diagnosis up to a comparatively recent date, has been deprived of whatever value it once possessed by the modern disclosure of various conditions, such as focal infection, syphilis, obscure carcinoma and parasitism, any of which may occasion intense anemia—often indistinguishable clinically from pernicious anemia—without clearly revealing itself in other ways. The quest of a purely clinical differentiation of this disease, therefore, fails to satisfy the purposes of classification or of practical diagnosis.

Recognizing this uncertainty of symptomatic differentiation, early attempts to reach a more solid basis of definition were directed toward uncovering the causes of the disease with the hope of identifying a specific cause. Those investigations were in part clinical like those of Biermer, who described forms of severe anemia in parturient and nursing women; or pathological like those of Fenwick and others, who described lesions in the gastro-intestinal tract and pointed the way to other studies of intestinal derangement; parasitologic like those which dealt with uncinariasis and Bothriocephalus infestation; or purely investigative like those of Hunter, who did so much to establish the prevailing opinion that some sort of hemolytic activity within the portal distribution is the fundamental characteristic of the disease. While much has been added to our knowledge of severe anemia in general and of pernicious anemia in particular by these studies, it is clear that down to the present date no etiologic factors have been discovered that can give us material aid in uncertain cases. It is equally clear, however, that of all the investigations along this line, those of Hunter come nearest to solving the difficulties or, to put the matter in another way, Hunter's contributions enable us to approach more nearly to a recognition of what the disease really is. This phase of the matter will, however, be dealt with more fully a little later.

The second important group of studies of the disease is the purely hematologic and embraces so long a line of investigators that it is useless to set down individual names, except that of Ehrlich, whose descriptions of the disease—in part original and in part the contribution of others—still remain the basis of our present conceptions. Some details have been added, but substantially, the hematologic picture drawn by Ehrlich and his students, stands. I shall not take the time to state the features of the blood picture. These are too well known to require mention in this discussion. No one with any considerable knowledge of blood diseases will doubt that this picture, when presented complete and typical in all its features, enables the clinician to make a positive diagnosis. Unfortunately, however, as experience increases, we are forced to admit that there are many cases in which undoubted pernicious anemia fails to show the characteristic hematologic picture for long periods of time or, having presented it, ceases to do so during remissions and there are cases of anemia which never present the picture in question, though in their clinical course, they leave scarcely a doubt that the condition all along was genuine pernicious anemia. It is evident that the blood picture alone does not suffice for diagnosis in all cases and it is clear that we need fuller information regarding the several items in the hematology of the disease to discover which feature or features are of greatest significance. The mere fact that an anemia is of excessive grade does not suffice, though I have little doubt that many cases are diagnosed on this basis without much consideration of the particular type of the anemia. Neither can we accept resistance to all forms of treatment as sufficient to establish diagnosis, though, undoubtedly every clinician will feel justified in giving great weight to it as confirmatory evidence.

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*Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 4, 1923.

Since the time of Hunter's first publications, more and more emphasis has been given to the hemolytic features in the clinical and hematologic study of the disease and, without doubt, these features, when evident, are of prime importance in the diagnosis of severe and protracted anemia. The appearance of the patient (icteroid), the yellow coloration of the blood serum, polychromasia and punctate granulation of the red cells, fragmentation and shadowing of the erythrocytes, enlargement of the spleen and chemical studies showing increased urobilin in the urine and feces are the conditions on which the recognition of hemolysis is usually based. When these symptoms or findings are present in a severe chronic anemia, the diagnosis is considerably advanced and is established, at least to the extent of excluding the so-called chronic secondary anemia. The regularity with which such evidences of hemolysis have been found, justifies the belief that hemolysis is a fundamentally important fact in pernicious anemia and certain authorities describe it simply as a "specific cryptogenic hemolytic anemia." By inference, the diagnosis of the disease requires the demonstration of evidences of hemolysis in any case under consideration. While altogether probable that hemolysis is an essential factor or *the* essential fact in the disease, practical observation requires acceptance of the statement that there are cases of pernicious anemia in which hemolysis can at no time be demonstrated by any of our available methods. The statement could be made more confidently that cases have been observed in which hemolysis was at no time discovered. It is altogether probable that in certain cases hemolysis is evident or present only at certain times and absent for considerable periods between the time of recurrence. There will, of course, be little question that this disappearance of hemolysis occurs during remissions, but there are not infrequent cases in which it is observed without remission of symptoms.

Improved methods have considerably increased our ability to demonstrate the occurrence of hemolysis and have in like proportion increased the certainty of diagnosis of certain doubtful cases of pernicious anemia. Among these methods, the Wilbur-Addis determination of urobilin excretion and the Vanderburg determination of bile pigment in the blood serum are of the greatest clinical value. The latter of these, on account of its simplicity and apparent reliability, will perhaps supplant all others. More experience with this test is needed to establish the limits of normality and the significance of slight increases above the upper normal, but in our clinic we have already encountered a small series of cases in which this method alone enabled us to determine the existence of hemolysis; and the fact that the test may be made frequently without great difficulty and with little disturbance of the patient, warrants the expectation that hemolytic periods or crises will be discovered in cases in which hemolysis might otherwise remain unrevealed. The method is too recent to justify any final statement, but the positive results I have met with when other methods failed, though few in number, seem to justify the expectation I have expressed. Before this test was available, I had met with a certain number of cases of pernicious anemia in which repeated investigations failed to show indications of hemolysis. We did not, however, hesitate to make the diagnosis on the basis of the clinical symptoms and course of the disease in conjunction with the existence of a severe grade of anemia and the absence of any adequate ground for the anemia.

Among the clinical symptoms that seem to justify a diagnosis in the absence of typical hematologic findings or evidences of hemolysis, the important ones in my opinion are the condition of the tongue, the presence of constant achlorhydria and the progressive development of degeneration of the spinal cord. These symptoms, in conjunction with the usual superficial clinical picture of the disease (asthenia, fair preservation of the body weight and intense anemia) justify the diagnosis even if the hematologic features are atypical and hemolysis is not evident. It does not, however, follow that a swollen, red or painful condition of the tongue, achlorhydria or spinal degeneration does not occur in cases of so-called secondary anemia. I have repeatedly seen one or other of these in cases of severe secondary anemia, but recall no instance in which all three occurred, except in pernicious anemia, and even the single occurrence of one or the other is far less frequent in other forms of anemia. Achlorhydria, of course, occurs in cases of carcinoma of the stomach with severe anemia, but in other severe secondary anemias of like grade, it is not regularly present as it is in pernicious anemia.

To summarize the foregoing: my conception of pernicious anemia is that it is a form of severe chronic anemia due to hemolysis, though practical clinical experience compels the admission that, in some cases in which the diagnosis was made, we could at no time, when tests were made, positively demonstrate the existence of hemolysis, either because it occurred only at certain periods or because our methods were inadequate. In such cases, the diagnosis of pernicious anemia is justified when, in addition to the evidences of a severe anemia, in type at least approximating the pernicious form, suggestive symptoms in the tongue and mouth, achlorhydria and progressive spinal degeneration are met with. So far as my experience goes, no case of so-called secondary anemia has presented this combination of conditions.

When a severe chronic anemia is associated with distinct evidences of hemolysis, the diagnosis is relatively easy. In this case one has merely to exclude certain unusual cases of hemolytic anemia associated with carcinoma and tertiary syphilis and the rather readily recognized types of splenomegalic ictero-anemia. In the former of these groups, the blood picture is usually distinctly that of a secondary anemia (relative poverty of hemoglobin, leucocytic excess, etc.) and the general appearance of the patient suggests some severe underlying cause of the anemia. In the case of ictero-anemia, the undue splenic enlargement, the marked icterus and the fragility of the corpuscles all stand out as distinct contrasts from the conditions found in pernicious anemia.

In long-standing cases of pernicious anemia, there may be a gradual failure of marrow activity so that, in the final stages, an approach to the picture of aplastic anemia is established. In my experience, this aplastic terminal stage has never been pronounced and, despite certain suggestions of cessation of marrow activity, the general picture has usually remained clearly that of a hemolytic type of the disease. In addition, it is to be noted that an aplastic termination of pernicious anemia occurs at so late a period that the possibility of primary aplastic anemia (a relatively short disease) rarely requires serious consideration.

Regarding the treatment of pernicious anemia, I wish to speak very briefly of transfusion, splenectomy, arsenic and germanium dioxid. It must first of all be remembered that remissions are common in this disease and that favorable results of treatment may, therefore, be apparent rather than real.

Transfusion has been recommended as a means to prolong life without influencing the disease itself or as an actually curative measure. There is little justification for assuming that it has any curative power, but there is reason to believe that life may be prolonged by its use. Some have thought that certain cases are hastened toward the fatal termination rather than retarded by transfusion. My own experience has not shown this definitely, though I have observed that cases with pronounced evidences of hemolysis reacted badly to transfusion and were, perhaps in some instances, hurried toward the fatal termination. I, therefore, hesitate to advise transfusion in actively hemolytic cases. Out of many instances of pernicious anemia treated by transfusion, only one has occurred in my experience in which the disease seemed to be arrested. In this case, there was little evidence of hemolysis, but the diagnosis of actual pernicious anemia had forced itself upon us though we had at first sought to classify the case as one of secondary anemia. After several transfusions, the patient gradually began to improve and when last seen presented a practically normal appearance and blood picture eighteen months after the last transfusion. Admitting that there may have been an error in the diagnosis or that the improvement was due to spontaneous remission, such an experience alone would seem to justify repeated transfusions in cases of probable pernicious anemia, not actively hemolytic. I could cite many instances in which temporary improvements followed each transfusion or in which considerable improvement followed a series of transfusions, but would regard all of these taken together as of less weight in justification of repeated transfusion than the one referred to—even though I willingly admit that this may have been a spontaneous remission.

The value of splenectomy has been much discussed and the general impression prevails that, though occasional gratifying remissions follow the operation, no lasting result can be expected. Statistics alone will help us little in deciding the question. Scrutiny of the published cases shows that severe anemias of all kinds have been subjected to splenectomy. Some of these were secondary anemias, others aplastic types—in neither of which splenectomy would be likely to prove useful. The best warrant for the operation in pernicious anemia is the undoubted cure of cases of ictero-anemia by this operation and the fact that pernicious anemia is definitely a hemolytic disease. It would appear from these considerations that splenectomy may be beneficial, if not curative, in cases of actively hemolytic types, and my own practical experience has been that in pernicious anemia of this type, results have been obtained that at least strongly suggest a possible arrest of the disease by this means in some cases.

Arsenic is the only drug that appears to have any effect whatever on the course of pernicious anemia. It must be used freely—almost or quite to the point of toxic symptoms. Fowler's solution in ascending doses and cacodylate of soda hypodermically or intravenously are the forms in which I have thought the drug most useful. Certain clinical experiences in cases with highly putrid stools have suggested to my mind the possibility that Fowler's solution given by mouth may have some useful effect within the intestinal tract and I have, therefore, of late, combined the oral administration of Fowler's solution with the subcutaneous use of cacodylate of soda.

Germanium dioxid is a recent addition to our therapeutic agents. The striking results of injections into animals (white rats)—increase in the number of red corpuscles and evidences of changes in the bone marrow and liver—suggested that we may have in this drug a powerful hemopoietic agency. After the preliminary investigations of Müller and Hammett had shown these results in white rats and had demonstrated the relatively low toxicity of the drug, I felt it proper to coöperate with them in a study of the drug in cases of anemia and in normal human subjects. None of my own observations have been published heretofore, but reports from various sources have appeared in the medical journals. I, therefore, feel it desirable to add the results of the work in my clinic to this paper. This study of germanium was conducted by a former member of my staff—Dr. W. R. Stanford of Durham, N. C., to whom I am indebted for the summary of results. It will be noted that some of the cases received relatively small doses hypodermically. This was in the earlier period of our study and, as these were the first humans to whom the drug was administered, we proceeded cautiously on the basis of the relative dosages given to white rats without toxic results. Later, larger amounts were used hypodermically and, finally, massive doses by mouth. As will be seen from the table, we failed to get the slightest result in any of the cases of anemia or in normal individuals. I am at some loss to understand some of the published results showing marked improvements of the blood picture after administration of this drug, but have been sufficiently satisfied with the results of our study to abandon any further trials.

Report on Administration of Germanium Dioxid

Name.	Age.	Diagnosis.	Duration.	No. Doses.	Method.	Quantity.	Per Kilo Dose.	Result.
1. Mary S.	26	Renal Tuberculosis	22 days	6	Hypo.	0.150 g	0.4 mg. to 0.9 mg.	Decrease.
2. Mary C.	27	Hodgkin's Disease	22 days	6	Hypo.	0.150 g	0.4 mg. to 0.9 mg.	Decrease.
3. Gertrude C.	30	Chlorosis	18 days	6	Hypo.	0.226 g	0.4 mg. to 0.8 mg.	No change.
4. Isadore F. .	17	Subacute Endocarditis	16 days	5	Hypo.	0.100 g	0.5 mg. to 0.8 mg.	No change.
5. Delia F. ...	45	Pernicious Anemia	20 days	9	Hypo.	0.413 g	0.6 mg. to 0.8 mg.	No change.
6. Elsie B.	37	Pernicious Anemia	27 days	10	Hypo.	0.188 g	0.4 mg. to 0.5 mg.	Decrease.
7. Sue McM. ..	25	Post Parturient Secondary Anemia .	10 days	3	Hypo.	0.037 g	0.1 mg.	Negligible increase (2%-4%)
8. Regina K. ..	38	Duodenal Ulcer	35 days	13	Hypo.	0.302 g	0.4 mg. to 0.9 mg.	Decrease.
9. E. F. C.	55	Pernicious Anemia	23 days	7	Mouth	0.775 g	2.0 mg. to 4.0 mg.	No change.
10. E. S.	..	Medical Student	20 days	4	Mouth	0.702 g	3.0 mg. (average) .	No change.
11. E. C.	..	Medical Student	15 days	5	Mouth	0.867 g	3.0 mg. (average) .	Negligible increase (2%).
12. W. S.	..	Medical Student	15 days	4	Mouth	0.679 g	3.0 mg. (average) .	No change.
13. O. W. R. ...	50	Pernicious Anemia	30 days	21	Alternate mouth &hypo.	1.725 g	Hypo. 0.5 mg. to 1.3 mg. mouth 2 mg.	No change.

DISCUSSION

Dr. Lawrence Litchfield (Pittsburgh, Pa.): When we vote Dr. Stengel extra time we should vote out all those who are to discuss his paper, for if we give him all the time he wants there is nothing left to be said about internal medicine. It is a bromidic remark to say that we cannot diagnose the existence of pernicious anemia or its cure until we have found its cause, and when identical etiology will produce in different individuals such varying manifestations, and when the reverse is also true, that various etiological factors will produce in different individuals practically identical manifestations, it makes it very difficult to feel that we have any solid ground under our feet when we try to diagnose atypical or borderline cases of pernicious anemia—whatever that may be.

Those of you who were present at the International Medical Congress in London in 1917 must have been very much impressed, as I was, by the remarkable paper of Banti on the function and pathologic manifestations of the spleen. Banti stated then very definitely that he felt there was a great difference in pernicious anemias as to the amount of hemolysis that was going on. He also stated that it was his belief that when hemolysis was a factor it was always manifesting itself through the spleen—that whatever might be the cause of the disease in which hemolysis was the threatening factor, the hemolytic change was taking place in the spleen, and that in all cases of anemia, whether pernicious or otherwise, in which hemolysis was an important factor, splenectomy would be of advantage. Particularly in those cases Dr. Stengel spoke of, in which transfusion seems to fail or even to hurry the patient along, it is possible that if we could select the right ones, we might occasionally cause brilliant results by splenectomy.

I have thought for many years that when I develop signs and symptoms of pernicious anemia I will hie myself to the Rocky Mountains and live just as high as I can with comfort. The longest remission I know of was that in a case of Dr. McPhadran's in which there was a remission of twenty-two years—and the diagnosis was unimpeachable before the patient went up into the Rockies. He had twenty-two years of remission and a typical death from pernicious anemia. Of course I should like to take Dr. Maclachlan with me in order to have a few transfusions, provided I was not hemolysing too rapidly.

I have been much impressed with a few cases that have been in the hands of Dr. Willetts—not by the course, but by the diagnosis. Dr. Willetts has long felt that with slight cord lesions, such as a modification of the temperature sense, sense of touch, and the vibration sense, very slight modifications in those sensory phenomena, with slight change in the size, shape and color of the corpuscles, is sufficient to make a diagnosis of pernicious anemia. That may not be true but in all the cases in which Dr. Willetts or I have made these observations the diagnosis of pernicious anemia has been confirmed subsequently.

In hearing the interesting discussions yesterday on the polycythemias and erythrocytosis I was struck by the association of both the conditions mentioned with altitude, which must be a strong stimulant to the hematopoietic system.

Dr. W. Egbert Robertson (Philadelphia, Pa.): Dr. Stengel has so thoroughly epitomized this disease from the time of Addison to to-day that there is very little comment to be made, but I should like to ask a question with respect to vital staining. Dr. Stengel mentioned but did not state the value of vital staining in the primary form in contradistinction to the secondary form. It is the type that gives the most changes when one uses methylene blue. One sees a vast majority that in the secondary anemias are not present. Whether this is of any value in the diagnostic sense is a question I should like to ask. I have used the method of Van Gieson, both on primary and secondary forms, but have not found it of as great value as I had hoped, on account of tentorial difficulties.

I was interested in hearing the Doctor speak of his experience with German dyes because I had much the same experience. With such statements coming from such an eminent authority I think most of us expected too much.

There are two diseases that are most apt to be confused with pernicious anemia, one of which, occurring at a time when hope exists through therapeutic intervention, is carcinoma. The other is syphilis. The work Dr. Henry and Dr. Osler did is still of value. I rescued some of those histories myself in the days when charts were not properly kept. Perhaps they are not properly kept to-day, but they show the great value of diagnosis in the early stage.

Again I would ask whether in Dr. Stengel's experience the vital staining would be of any value here. I have seen cases of syphilis in which the blood was the same as in anemia, even to the vital stain.

Dr. Milton W. Phillips (Chapman Quarries, Pa.): I had a case six years ago that I should like to talk about for a few minutes, since we have one of the pioneers in focal infection present. I had a young woman, aged 35 years, unmarried, who began to complain of vague pains. I at once thought of rheumatism. I treated her but she got progressively worse and after two weeks she was so weak that her friends thought we should call in a consultant. We did so. The principal symptom then was purpura hemorrhagica. This was the worst case of this type I had ever seen. The consultant said that he did not know what to do nor what to advise. He had never seen a similar case. The blood was oozing through the tissues and she had blebs in her mouth as big as a half dollar. She had nose bleed, blood in her stools and urine, became progressively worse and finally became unconscious. This was on a Thursday and I had expected her to die that day. Seeing no crepe at the door the next day I called again. She was better and finally was able to take food again.

After she was able to be up I told her father that I did not know what was the matter but I had heard Dr. Stengel read a paper on anemia at the American Medical Association's meeting. We took her to Philadelphia to Dr. Stengel. He examined her and said that he did not know where the trouble was, that he could not find anything but a mild leukocytosis, but would have the teeth examined and if they showed nothing would have the tonsils examined carefully. We went to a dentist and had her teeth examined. The patient had an upper set of false teeth and some of the tooth roots had been left in the lower jaw. The dentist removed these and found a granuloma at the end of the root of one of them. Dr. Stengel advised giving arsenic. We gave this drug for three weeks and since then the patient has been perfectly well.

Dr. Judson Daland (Philadelphia, Pa.): I think Dr. Stengel has pointed out very clearly the great struggle that has been going on in the minds of all of us in an effort to make all anemias secondary. Every year there has been a little encroachment on pernicious anemias and a certain number have been moved over to the secondary group.

Dr. Stengel quoted the case of Henry and Osler with widespread atrophy of the gastric tubules and they believed that this was one of the causes, if not the cause, of pernicious anemia.

One of the striking peculiarities about pernicious anemia is that complete remission may occur for a period of one or two years and then suddenly and causelessly the disease returns.

The thought occurs to me that we are dealing with some special toxic substance that has a specificity for the cord on one side and the gastric mucosa on the other.

I should like to refer to a case showing how easy it is for toxic materials to produce the blood picture of anemia. A baby under the care of Dr. B. C. Hirst showed the typical, characteristic blood picture of pernicious anemia. Nothing further was discovered while under observation for a week, excepting that the child was losing hemoglobin more rapidly than erythrocytes, which suggested a toxemia of intestinal origin. Cathartics, colon irrigation, diet and hygiene were followed by recovery.

Dr. A. I. Rubenstone (Philadelphia, Pa.): This interesting talk by Dr. Stengel helps to illuminate the subject of anemias, particularly the differential diagnosis. The point that is of great import is that pernicious anemia is not a primary anemia in nine cases out of ten. His treatment for the anemias is very instructive. There is only one point in which I wish to differ with him. I cannot agree with the doctor that, in hemolytic anemias, blood transfusion does no good and may be harmful. That has not been my experience. If one recalls the rapidity with which hemolytic anemias of all types go down hill in spite of any treatment, one cannot blame it on the therapeutic measures.

Based on many transfusions in severe types of anemias, I positively recommend transfusion where hemolysis may exist. Witness, for example, a case of severe anemia due to puerperal sepsis with marked hemolysis and a positive streptococcus blood culture. In this type of case, those who do transfusion work frequently see patients brought back by repeated transfusions when all other measures are of no avail. On the same basis why cannot other types of severe anemia, etiologicaly undiagnosed, be benefited or the fatal outcome delayed by transfusion? With proper grouping of the blood of the donor and recipient, and with direct matching of bloods immediately before transfusion, it is a very helpful measure.

I am probably the indirect cause of saving many souls because a minister in Philadelphia, with a very marked type of pernicious anemia prognosed fatally seven years ago, is still alive and is still saving souls because of having repeated transfusions.

Dr. Stengel (in closing): I simply want to answer the question of Dr. Robertson regarding vital staining. My experience agrees entirely with his that vital staining is one very helpful means of distinguishing between severe secondary anemias and pernicious anemias. Of course, an increase in the number of skein cells does not establish the diagnosis. It establishes the fact that there is marrow activity and this is to be expected in cases of true pernicious anemia and it is not to be expected in cases of ordinary secondary anemia.

I listen with interest to anything Dr. Rubenstone says on the subject of transfusions. We in Philadelphia know of his very good work along this line. I have long believed that he has done much good in treating cases by transfusion, but I did not know that he had advanced to saving souls. So far as the remark I made regarding transfusion in actively hemolytic cases is concerned, that has been my experience. The actively hemolytic cases have not shown improvement as the inactive cases have shown and the cases which grew worse after transfusion have generally been, if not always (I speak without reference to any statistics), the actively hemolytic, so I hesitate to advise transfusion if the case is one of this type. The same remark might be made with reference to other forms of hemolytic anemia in which I have also seen bad results from transfusions. I think the rôle of transfusion is in the cases in which the impoverishment is not due to active blood destruction, or in which hemolysis, if the original cause, has ceased being active, while at the same time restorative powers (hemopoiesis) are to some extent preserved.

A CONSIDERATION OF POLYCYTHEMIA*

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Polycythemia is the name for a condition characterized by a red cell count decidedly above the average. Ordinarily the term is used to include those cases of apparently primary origin, better designated as erythremia and also those cases which are obviously compensatory in nature, better referred to as erythrocytosis. In this way the terms erythremia and erythrocytosis are analogous to leukemia and leukocytosis; leukemia indicating a condition of unknown origin characterized by an unusual number of white blood cells, and leukocytosis referring to an increase of leukocytes that is obviously secondary.

The purpose of this report, however, is not a discussion of these terms, important as they are, but rather to record briefly the notes of four dissimilar cases presenting polycythemia as a prominent feature, in order to emphasize that this condition is to be looked upon as a symptom for which the cause must be sought.

The first case is an example of secondary polycythemia (erythrocytosis) due to congenital heart disease. I am indebted to Dr. S. A. Loewenberg for permission to record it.

Case I: A. B., a white male, aged 22, was admitted to the tuberculosis ward of the Philadelphia General Hospital, August 4, 1922. He complained of cough and blood spitting. The past history was important in that he had never enjoyed good health, caught cold easily, and became short of breath on slight exertion. On admission to the hospital the patient presented an unusual appearance. He was markedly cyanosed, his face grayish, lips blue, and the lobes of his ears dusky red. His fingers were clubbed and cyanotic. Physical examination disclosed evidence of active tuberculosis in addition to unusual cardiac findings. The heart was enlarged to the right and left, and a marked systolic thrill was palpable over the base. In the third interspace to the left of the sternum there was a harsh systolic murmur and a continuous bruit transmitted to the left shoulder and back. The edge of the spleen was palpable, and the liver extended two fingers' breadth below the costal margin. There was slight edema of the ankles, and the toes were clubbed and cyanotic.

Examination of the blood revealed: hemoglobin 110 per cent; red blood cells 7,460,000; white blood cells 15,600; polynuclears 80 per cent; lymphocytes 16 per cent; mononuclears 2 per cent; eosinophiles 1 per cent; and 1 per cent of basophiles. X-ray of the chest confirmed the diagnosis of pulmonary tuberculosis and the sputum was positive for tubercle bacilli. The electrocardiographic study, contrary to the rule in such cases, gave no aid in the determination of the nature of the cardiac lesion.

The tuberculosis eventually resulted in the patient's death. The heart condition was thought to be congenital, probably pulmonary stenosis with persistent ductus arteriosus. Necropsy disclosed advanced pulmonary tuberculosis and a congenital heart lesion—pulmonary stenosis with interventricular foramen, a fairly common association.

Here then we were dealing with the secondary polycythemia (erythrocytosis) of congenital heart disease, in which the increase of red blood cells was distinctly compensatory in nature, and was brought about because of deficient oxygenation.

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Case II: Ayerza's disease—secondary polycythemia (erythrocytosis) caused by sclerosis of the pulmonary artery and its branches.

G. G., a male, Russian, aged 37, was admitted to the Jefferson Hospital, February 5, 1920, on the service of Dr. McCrae, to whom I am indebted for permission to report the case. He complained of shortness of breath, swelling of the feet, and dull pain in the chest of about one year's duration. His past history was not important. Physical examination showed marked cyanosis, venous engorgement, and clubbing of the fingers. The chest was barrel-shaped, and moist râles were heard at the bases of the lungs. The heart seemed enlarged to the right and left; there was a diffuse cardiac impulse; no thrill or murmur; the pulmonary second sound was accentuated. The abdomen was distended; the liver enlarged; the spleen was not palpable. The x-ray report, in view of necropsy findings, was interesting: "The heart is enlarged and there is considerable fibrosis or some sort of infiltration throughout both lungs, more marked in the lower half of the right chest."

The blood count on several occasions was: hemoglobin 118-120 per cent, red blood cells 6,020,000-7,470,000, white blood cells 9,200. Differential count normal. Blood pressure was 120/70. The urine contained a trace of albumin and occasional hyalin casts. Blood Wassermann was negative. The patient grew progessively worse and died on March 25, 1920, of right heart failure.

The necropsy, permission for which could not be obtained until three days after death, showed enlargement of the right heart and marked degeneration and sclerosis of the pulmonary artery and its branches, extending to the smallest subdivisions. From the gross appearance one would be led to believe the process syphilitic in nature, in spite of the negative Wassermann and the inability, because of the decomposition of the tissues, to demonstrate the typical microscopic findings, or find the spirochete.

This case I am tempted to classify as "cardiacos negros" or Ayerza's disease, first described by Ayerza of Brazil in 1901; later reported by his pupil, Arrillaga; ably presented by Warthin[1] in America; and called "chronic cyanosis with secondary polycythemia rubra of cardiopulmonary origin" by Parkes Weber[2] of England, who found it occurring commonly among the Polish or Russian Hebrews of the East End of London. Warthin and Parkes Weber are not agreed as to the cause of this form of polycythemia. Warthin believes it to be due to syphilitic sclerosis of the pulmonary artery and its radicles, and demonstrated this condition in the case he reported; while Parkes Weber noted the affection in a particular type of individual and concluded that sclerotic and degenerative changes occur in the pulmonary artery as a result of chronic high blood pressure.

In either event, the polycythemia (erythrocytosis) is definitely secondary, i. e., a compensatory process marking the attempt of the human economy to overcome the deficient oxygenation of blood and tissues brought about by the narrowing of the pulmonary vessels.

Secondary polycythemia (erythrocytosis) apparently as a result of blood stasis *not* of cardiopulmonary origin is illustrated by the following case:

Case III: R. K., a Russian Jewess, aged 40, was admitted to the private service of Dr. S. Solis-Cohen at the Jewish Hospital on February 10, 1923. I am indebted to Dr. Solis-Cohen for permission to study and report this case.

Four days after the delivery of a stillborn child in March, 1922, she had developed pain in the upper right abdomen, nausea, vomiting, chills, fever and jaundice, and had remained jaundiced for six or seven weeks. She was admitted to the Lankenau Hospital on April 1, 1922, and gave a history of a similar attack of jaundice eight years before, which, however, had not followed childbirth. She had had typhoid fever and smallpox in her youth. Her married life was marked by three stillbirths and three miscarriages. Physical examination at the Lankenau Hospital disclosed an enlarged liver and a large mass in the left upper quadrant, presumably spleen. The blood count at that time (April 4, 1922) was: hemoglobin 70 per cent, red blood cells 2,800,000, white blood cells 17,900, polynuclears 89 per cent, lymphocytes 8 per cent, and 3 per cent of large mononuclears. She was discharged from the hospital May 9, 1922, considerably improved clinically, and returned to the follow-up clinic on several occasions, the last visit on October 18, 1922, at which time a notation was made that the liver extended 6 cm. below the costal margin and the spleen to the crest of the ilium. In December, 1922, she began to have severe pains in the left upper quadrant of the abdomen, and noted an increase in the size of the mass, which caused a dragging sensation when she stood up. A blood count performed at another laboratory (Dr. A. I. Rubenstone) about this time showed: hemoglobin 80 per cent, red blood cells 4,600,000, white blood cells 14,000, and 78 per cent polynuclears. Her blood Wassermann at this time, as well as in the hospital, was negative.

At the Jewish Hospital in February, 1923, the patient presented the following physical findings: the face was flushed and cyanotic, conjunctiva injected; teeth bad; infected, spongy gums; mucous membranes of mouth and throat of a deep red hue. Examination of the heart was negative, but there was deficient expansion, impaired percussion note and distant breath sounds at the left base posteriorly and in the axilla. The abdomen was distended and the superficial veins were prominent. The liver was palpable three fingers' breadth below the costal margin, and a firm mass in the left upper quadrant extended to the superior spine of the ilium. This was thought to be spleen. The eye grounds showed dilated veins and tortuous arteries. The temperature varied between 98 and 99.2, the pulse 88 to 108, and the respirations 24 to 32.

An interesting point was the result of the blood examinations. On several occasions the hemoglobin was found to vary from 102 to 120 per cent, red blood cells 5,820,000 to 7,590,000, white blood cells 10,400 to 19,700, polynuclears 74 to 85 per cent, and the remainder of the differential count normal. The urine showed a trace of albumin and occasional hyalin casts; blood cultures were negative and other laboratory studies were of no importance.

It was difficult to account for the polycythemia, especially in view of the fact that she had had a sufficiently severe anemia, just a few months before, to suggest the diagnosis of splenic anemia. It was thought that probably a slow obstruction of the portal or splenic veins had occurred, and that the resultant stasis accounted for the splenic enlargement and for the polycythemia, as Parkes Weber has shown that it may. The patient was discharged on March 7, 1923, somewhat improved, but presenting the same physical findings. It was learned from her family physician, Dr. Samuel Jaffe, that she was operated upon several months later in another hospital, and much to everyone's surprise, a huge subphrenic abscess was found and drained. The spleen was enlarged to five times the normal size and contained a large infarct, but no further observations were noted. She did not rally from the operation, and died several days later. Necropsy was not obtained. While the splenic and portal veins were not observed, I am strongly of the opinion that they must have shown some degree of obstruction. Such stasis would explain the polycythemia and the huge enlargement of the spleen with infarction.

It is impossible to be certain of this explanation, but at the same time it serves as an illustration of another important cause of secondary polycythemia (erythrocytosis), i. e., obstruction due to chronic thrombophlebitis in the portal vein or its tributaries, as pointed out by Parkes Weber in his admirable monograph. Here he gives notes of three cases in which the erythrocytosis was due to partial blood stasis in the portal circulation. The high blood count, he further states, may be present only for a period and may eventually give place to normal count or an actual anemia, and in the latter event a clinical diagnosis of splenic anemia or Banti's disease may be made. Indeed Warthin is of the belief that so-called Banti's disease may be of such origin.

Just why chronic obstruction in the portal system should cause polycythemia is not clearly understood, but Parkes Weber states that "individual peculiarities of reaction may perhaps help to explain the fact that splenomegaly connected with (or actually caused by) chronic thrombotic or thrombophlebitic obstruction in the portal vein and its tributaries (phlebitis splenoportalis) may in some individuals be associated with oligocythemia so as to simulate splenic anemia or Banti's disease, * * * and may in other individuals be associated with polycythemia so as to give rise to the symptom complex of splenomegalic polycythemia."

I am indebted to Dr. H. A. Hare for permission to report the following case of primary polycythemia (erythremia).

Case IV: E. B., a white man, aged 41, who was admitted to the Jefferson Hospital on the service of Dr. Hare, May, 16, 1921, complained of vertigo and a dull ache at the left costal border. His family history and past history were unimportant. Six years before he had first noted daily nausea coming on about noon time. This symptom had been present more or less constantly since. He never vomited. For the last two or three years he had had a dull pain at the left costal border and had suffered from daily attacks of vertigo. He had dimness of vision and blurring, and was always giddy and light in the head. For the last year he had had tingling and numbness of the hands and arms, and recently of the lips and face.

Physical examination showed a well nourished man with flushed face and a suggestion of cyanosis. The mucous membranes of the lips and mouth were of a deep red hue, pharynx injected, heart and lungs negative, the edge of the spleen palpable. The eye grounds showed a hyperemic disc, arteries tortuous and veins broad and full. The temperature was normal, pulse 80 and regular, and blood pressure 110/80.

The blood count on numerous occasions was: hemoglobin 120 per cent; red blood cells 9,200,000-10,000,000, white blood cells 9,800. Differential count normal. The urine contained a trace of albumin, but no casts. Wassermann could not be performed because of the viscosity of the blood. Gastric analysis and blood chemistry were normal. Sputum and feces examination were negative.

The patient was bled on several occasions, but left the hospital May 23, 1921, unimproved.*

Here was a patient presenting polycythemia, cyanosis and enlargement of the spleen, and although carefully observed, no cause, in history or physical examination, could be found. Under such circumstances I believe we are justified in considering the condition primary and in terming it erythremia. Parkes Weber is of the opinion that such a condition exists and believes it to be a primary hyperplastic disease of the erythropoietic bone marrow. There are others who consider all polycythemias as secondary. Warthin, for example, does not believe that cyanosis and dyspnea belong to primary polycythemia (erythremia) and that when they are present it is certain that the condition is secondary, i. e., compensatory in nature.

Certain finer features of the blood count, however, point to a primary basis for true erythremia. Minot[3] recently reported a study of fifteen cases, in three of which polycythemia was followed by an enlarged spleen, then anemia, and finally death. The blood picture looked like that of myelogenous leukemia. Abnormal and immature forms of white cells were present. He suggested, therefore, that these diseases are perhaps intimately associated. It is not unusual to find occasional myelocytes in the blood of patients with erythremia, and Blumenthal, quoted by Parkes Weber, reported a case in which during life 36 per cent of the white cells were found to be myelocytes. After death the leucoblastic elements of the bone marrow were found to exceed very greatly the erythroblastic elements. Parkes Weber states that Blumenthal's case appears almost to represent a link in a chain, which future observations may discover, connecting erythremia with myelogenous leukemia.

In the present state of our knowledge we are therefore forced to look upon erythremia as a primary disease; but—and this is the point I wish to leave with you—we are to admit this diagnosis only by exclusion, i. e., not until we have searched diligently for a cause are we to abandon the thought of secondary polycythemia (erythrocytosis).

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*I was fortunate enough to see him again on September 20, 1923. Since his discharge from the Jefferson Hospital his condition has remained about the same. His weight varies between 112 and 117. He has considerable dyspnea on slight exertion, and complains of a "half dumb" feeling. In May, 1922, he had his tonsils removed without benefit, and in June, 1923, he had, on several occasions, radium treatment to the long bones and spleen. This, according to his statement, had reduced the size of the spleen, but had no lasting effect on his blood count, and had made no difference in his general condition.

Physical examination disclosed a small, wiry man with high color, prominent temporal vessels, and injected conjunctivae. The mucous membranes of the nose, mouth and throat were deep red in color, and there was a marked capillary fringe about the costal border. Examination of the heart and lungs was negative. The liver was not palpable, but the edge of the spleen could be felt three fingers' breadth below the costal margin. There was no edema, and the reflexes were good.

Examination of the urine showed a decided trace of albumin and an occasional granular cast. Blood count revealed: hemaglobin 120%+ (Dare), red blood cells 9,500,000, white blood cells 6,400, and a normal differential count, with the exception of an *occasional myelocyte.*

There are many varieties of secondary polycythemia that I have not considered here (as instances, the physiologic form observed in high altitudes, and that form described by Geisbock which is associated with hypertension), but my main thought was to emphasize the secondary nature of many cases of polycythemia.

Just a word in regard to treatment: X-ray therapy of the long bones and spleen has been advocated, but certainly it is not a measure to be used in those cases in which the polycythemia is distinctly secondary or compensatory in origin. In other words, if the erythropoietic apparatus is manufacturing more cells to meet a definite need, why interfere with or hinder a useful process? This would be analogous to the use of antipyretics in a harmless fever. The same is true of splenectomy. The splenic enlargement is a compensatory measure. The organ enlarges because it is destroying an increased number of red blood cells, and to remove it is to take away one of nature's protective mechanisms.

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DISCUSSION

Dr. W. W. G. Maclachlan (Pittsburgh, Pa.): I think Dr. Weiss is very fortunate in having seen one primary case and three secondary cases of polycythemia, and I think we are very fortunate in having heard of his experience. The interesting point of this condition is firstly, the rarity and secondly, the obscure origin of the primary forms of the disease. I believe it would be well to keep the primary and secondary forms separated and more or less follow Parkes Weber in his findings. The primary disease at autopsy showed, according to him, an enlarged spleen, engorged vessels and hyperplastic bone marrow. The clinical sign that is very interesting is that primary polycythemia is often very like leukemia. In fact, in some of Weber's cases, as Dr. Weiss has said, the presence of myelocytes up to thirty-six per cent has been noted. This would seem to indicate that the pathology in this form has to do with the myeloblastic structures. Secondary forms appear different and the ones that Dr. Weiss mentioned were examples taken from the most interesting conditions that have been known to be associated with polycythemia. I think one form that we see relatively often is that associated with the taking of the coal tar drugs. I am sorry that Dr. Weiss did not refer to his third case, because it belongs to an important group, namely, thrombosis of the portal and splenic veins with a secondary polycythemia.

About thirteen years ago we had a case of Ayerza's disease. This case showed a very extensive and diffuse thickening of the whole pulmonary arterial system. The sections of the arteries showed an endarteritis and a slight mesarteritis with a moderate thickening of the adventitia. At the time we considered the condition as syphilis, although with a question mark. We could not prove it. Warthin believes this condition to be due to syphilis. Parkes Weber takes the opposite view. Certainly there are few known causes of arterial changes simulating this one in the lung that are due to other factors than lues.

It is also interesting in the secondary form that the commonest ones described are associated with a vascular lesion, namely, thrombosis of the portal and splenic vessels. The infarction of the spleen in Dr. Weiss' third case also corresponds to some of the cases observed by Weber. His first case further brings out the other usual form, namely, secondary to congenital heart disease and a chronic lung infection. In all the secondary forms there is seemingly one common factor, a deficiency in the proper oxygenation of the tissues, and hence the increased red cell formation should not be destroyed by treatment as it is merely a compensatory process. I appreciate very much the opportunity to discuss this very interesting paper.

Dr. Judson Daland (Philadelphia, Pa.): I wish to thank Dr. Weiss for presenting such a beautiful and clear-cut picture of three cases of polycythemia and am sorry we did not hear the fourth. The term "erythrocytosis" is good and should be adopted. It seems to me remarkable how quickly the human body adapts itself to changed conditions. Blood pressure will jump twenty or thirty millimeters if a piece of crockery is dropped on the hospital floor, due to noise and alarm. I have been going over the question of altitude sickness and only two weeks is required for a man to adapt himself to extreme changes of altitude. If a normal man lives at 6,000 feet with 6,000,000 reds and removes to 18,000 feet he will in two weeks have 9,000,000 reds, and when he returns to 6,000 feet, in two weeks the number of erythrocytes descends to 6,000,000.

The difference between secondary and primary disease is enormous. We have here only the indication of something going wrong in the primary stage, namely, the increased red cells, and in the secondary we have the need for more red cells. In primary polycythemia—I do not like the word primary except when we add that we are ignorant of the cause—it is very evident that we have something operating upon the red blood making organs by which an increased number of cells are produced. It would seem in cases lasting for a long time that the hematopoietic system would show signs of exhaustion.

In the so-called primary form of polycythemia the first effort should be to discover the cause, and upon its removal benefit may be expected. In the last case reported it appears as though the bone marrow was diseased.

I greatly enjoyed this paper and congratulate the essayist.

Dr. A. I. Rubenstone (Philadelphia, Pa.): I wish to lay emphasis on but one point, and that is in reference to artificial erythrocytosis. Very frequently we obtain counts that are apparently high, sometimes six to eight million reds, when in reality there does not exist an erythrocytosis. Witness the peripheral congestion that you frequently get in cardiac disease. Very often, in such cases, a count obtained by means of an ordinary finger prick exceeds seven million reds, and one is prone to make a hasty diagnosis of polycythemia. When I suggest a count from the median basilic, or any large vein, the count is either normal or the patient is really anemic.

That error in technic frequently leads to wrong diagnosis, and to the great disadvantage of the patient sometimes, is exemplified by one case in which Dr. Weiss was also interested. I obtained a count of four million reds by venipuncture. Two weeks later Dr. Weiss informed me that he was astonished at my count, since the count was repeated in another hospital and the patient was really polycythemic. I was sorry to hear that, but later learned that the patient subsequently came to an operation and they emptied a large, left subphrenic abscess. She died a few days after operation. Undoubtedly, had not a definite diagnosis of polycythemia been made on her, the real pathology might have been discovered.

Another point that one must bear in mind is that sometimes high counts are obtained as a result of blood concentration, such as temporary concentration due to purgation or marked diaphoresis. Of course, blood volume is made up promptly, but if the count is done during or following such measures, high figures may be obtained and confusion in diagnosis may result.

BLOOD TRANSFUSION

INDICATIONS AND METHOD OF ADMINISTRATION*

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Blood transfusion as a therapeutic measure is unsurpassed in that it produces more satisfactory results than almost any other form of treatment. Formerly used only in a few selected cases of hemorrhage, it has now become popular in almost every branch of medicine. Crile was instrumental in reinstating blood transfusion, but because of the great surgical skill required his method was not generally accepted, and until Lindeman devised the syringe and needle method, transfusion was little used. Although this had the advantage of accurately measuring the quantity of blood used and being available for general use, it soon met with disfavor because the blood so frequently coagulated in the instrument. In order to overcome this one objectionable feature Lewisohn instituted the citrate method, using sodium citrate as the anticoagulant. In 1915 Unger brought out a very ingenious device by which undiluted blood could be transferred without coagulation and without the injection of air.

Transfusion has, by a process of simplification, been changed from a major surgical operation, the performance of which caused extreme professional and public interest, into a so-called "medical procedure" creating as much excitement as a spinal puncture or the administration of neoarsphenamine.

Without going into a detailed discussion of the various methods of transfusion, I propose to discuss the advantages or disadvantages of the citrate method and the Unger whole-blood method.

CITRATE METHOD

This method was instituted, as stated previously, in order to prevent coagulation—the objectionable feature of the old whole-blood method.

Disadvantages

1. It does not always prevent coagulation and the entire amount of blood may be lost.
2. A foreign body is being introduced and there are recorded cases of reactions resulting in death from the injection of 50 c.c. of a 2% sodium citrate solution.
3. Citrate solutions have a high Ph. value and it may be that the rapid neutralization in the body disturbs the colloidal equilibrium of the cells, producing a reaction.
4. Because the blood is subjected to too much stirring, because it is strained through gauze, and then passes through long rubber tubing, the chance for certain degrees of coagulation is great.
5. There is chance for contamination by the exposure to air and repeated handling.
6. Most observers agree that the reactions are more frequent than with the whole blood method.
7. A thrombopenia is produced by the addition of citrate, by the stirring and by exposure to air. This forms a very important contraindication to its use in conditions that have a low platelet count.
8. Citrate solutions are contra-indicated in conditions where the coagulation time is prolonged.

Advantages

1. It avoids the necessity of having patient and donor in one room.
2. In cases of septicemia or lues it avoids the possibility of infecting the donor.

UNGER WHOLE BLOOD METHOD

As stated before, the addition of citrate is to prevent coagulation. Now, if a method is devised that assures the transfer of blood without coagulation, what reason can there be for the use of an anticoagulant?

Advantages

1. Whole undiluted blood is used.
2. A foreign body is not injected.

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*Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 4, 1923.

3. It is quickly and easily performed.
4. Less chance for contamination.
5. Fewer reactions.
6. Platelets not disturbed as the blood does not come in contact with the air and as it meets with a minimum of resistance in transfusion.

Disadvantages

1. It requires a special apparatus.

Unfortunately, even though all precautions are taken, severe hemolytic reactions occur sometimes, resulting in death. This accident has not occurred with any of our patients except those with primary anemia.

The indications for transfusion are many: Acute hemorrhage; anemia, primary and secondary; certain acute infections; jaundice; gastric ulcer; bleeding ulcer; preoperative and postoperative, rendering a poor surgical risk a safe one; septicemia and a secondary anemia; debilitation from chronic gynecological and genito-urinary infections; nephritis with secondary anemia; arthritis with secondary anemia; blood dyscrasias such as purpura hemorrhagica, hemorrhage of the newborn, hemolytic icterus and hemophilia.

In considering the indications for transfusions the acute hemorrhages deserve first place. Little need be said about the value in this type of case. There is only one point to emphasize: it is almost never too late; even in the most hopeless cases, remarkable results can be achieved by transfusion.

One of the most important uses of transfusion, and one that is often neglected, is its use in that group of cases that are debilitated, weak, who are at a standstill medically or surgically. Too little attention is paid to the fact that there is an associated secondary anemia. Because they have 60% hemoglobin and 3,500,000 red blood cells it is thought they will make this up later and nothing is done. Secondary anemia cases as a group offer the best opportunity for success with transfusions and yet, because the effect of an anemia is overlooked or because interest is centered in a primary condition or because a transfusion is considered to be too much trouble, it is not given.

A movement should be started for the more frequent use of transfusions in cases of secondary anemia, in arthritis, in chronic infections, in nephritis, in gastric ulcer, in chronic suppurative, slow-healing wounds, in cases of pelvic suppuration, in making a poor surgical risk a safe one, and in shortening convalescent periods. Most of the cases of secondary anemia seldom suffer severe reactions and, therefore, are attended not only with the most agreeable results but with greatest safety.

Septicemia: Much has been written condemning the use of transfusion in septicemia to the effect that it is definitely contraindicated and does more harm than good. Blood transfusion has, however, a very definite place in septicemia. It is not given with the hope of destroying or even diluting the toxic agent, but if the infection has produced a secondary anemia of moderate or severe degree, then I believe a transfusion is indicated. In three cases, one staphylococcus albus, and two streptococcus viridans, where hope of recovery was lessening, transfusions were given at periods, and in each instance marked improvement resulted. Blood transfusion simply treats the anemia and aids the patient better to withstand the infection. Citrate transfusions should not be given because they increase the liability of reaction.

Blood Counts Following Transfusions in Primary and Secondary Anemia: Before taking up the two last indications (purpura hemorrhagica and pernicious anemia), I wish to discuss the frequency of administration. Blood counts were made the day before, and one, three and five days after transfusions. It was found that in cases of secondary anemia there was an initial rise in hemoglobin and red blood cells followed in five days either by a greater increase or a slight drop from that point; while in pernicious anemia there was an initial rise followed in most cases by a drop which takes a sharp downward curve in three to five or seven days, often going as low or lower than the count before transfusion. It seemed only reasonable, therefore, to repeat the transfusion before this fall came—that is, to stimulate at the peak of the rise, before the fall began. It is, therefore, our custom to transfuse every four or five days, giving 350 to 450 c.c. at each transfusion.

Purpura Hemorrhagica: Blood transfusion is of value in the treatment of purpura hemorrhagica. The reaction to transfusion is very much like that of pernicious anemia: that is, a few days after the initial rise there is a decided fall in the hemoglobin and red blood cells, often going as low or lower than the original level. Therefore the transfusions should be given every four or five days. In this disease the bleeding time is greatly lengthened and the blood platelets reduced well below 100,000. As citrated blood tends to diminish coagulation and reduce the number of blood platelets, its use is contraindicated.

Transfusions accomplish three things: stop the hemorrhage, increase hemoglobin and red blood cells, and improve the general condition of the patient.

The indications of improvement are increase in hemoglobin and red blood cells; shortening of bleeding time and increase in blood platelets. The platelets are slowest to increase and in many cases weeks elapse before they reach normal.

It is important to have weekly red blood cell, hemoglobin and platelet counts made. If the hemoglobin drops below 75 to 80% and the red blood cells below 3,500,000 another transfusion should be given or whole blood injected subcutaneously. The patient should be under observation until the platelet count as well as red blood cells and hemoglobin are normal.

Pernicious Anemia: It is for this condition that blood transfusion seems preëminently indicated, yet many hesitate to use it and some go so far as to term it a life-shortening measure. It is true that there are obstacles often difficult to overcome, that reactions are more common here than in almost any other disease, and it is also true that patients may die directly following a transfusion for this condition. This does not, however, form sufficient reason to discredit this most valuable therapeutic measure.

What can we hope to accomplish with transfusion?

First, is its use a life-giving measure? There can be no doubt of the value of even one transfusion to a patient with a hemoglobin of 10 to 20%, red blood cells 600,000 to 800,000 and suffering from a train of distressing symptoms. There is no doubt in the mind of the patient who receives the blood and who is relieved of his diarrhea, who finds added hope in the sensation of new strength, or who is relieved of painful neuritis. Even though the good result is only temporary, transfusion is definitely indicated in this type of case.

Second, transfusion is given with the hope of stimulating a remission.

Third, there are a few patients who are able to maintain the high blood level for many years and could almost be classed as cured.

Fourth, transfusions are given to maintain the blood at a level compatible with body needs until such a time as through a remission the patient may be able to carry on without the help of this gift blood. Bodily nutrition is better sustained with blood at 70% than at 20%, whether it is the result of own or of gift blood. If this level can be maintained, with the improved cellular nutrition, the chance for a remission is greater.

These are the things that can be accomplished by blood transfusion. Anyone who expects blood transfusion tc cure pernicious anemia, or anyone who expects a single transfusion to produce permanent benefit is bound to meet with distinct disappointment. Transfusion is definitely indicated in pernicious anemia but the method, amount and frequency of administration are of vital importance.

Method: Because of the fact that the coagulation time is usually prolonged because the platelets are decreased in number, citrate solutions are contra-indicated. Whole blood should be used.

Amount: Moderate amounts, 350 to 450 c.c., are more satisfactory than large amounts, because the chance of reaction is lessened, because there is less strain placed on the heart, and the possibility of depressing blood formation is less with moderate than with large amounts. Also a moderate amount is more beneficial than a small amount of 25 to 50 c.c., as not only is there a stimulating effect but the added volume of blood seems greatly to benefit the patient and in cases with very low blood counts smaller amounts can hardly produce the desired results.

Serious reactions may occur with the injection of but 50 c.c. of blood and, therefore, the only value of these small injections is in cases that need blood when donors are not obtainable. A small amount of blood can easily be obtained and, as Dr. Colwell showed last year, the injection will increase the red blood cells and the hemoglobin.

It is well to use a smaller amount in the first transfusion—about 250 to 350 c.c., for a reaction is common at the first transfusion or if a period of more than seven days has elapsed between transfusions.

Frequency: The frequency of administration is of the greatest importance. As previously stated, red blood cells and hemoglobin drop after the initial rise in four or five days, often to as low or a lower level. Accordingly, it is essential to give blood every four or five days.

Failure to follow the routine as outlined forms one reason for poor results and for much of the adverse criticism. It has been the custom to use citrate solution, to inject a large amount of blood with long intervals between transfusion. In the past week I have seen a case of pernicious anemia where the hemoglobin was 21%, and red blood cells 900,000. The patient entered a Philadelphia hospital with a hemoglobin of 30%. During a stay of three months she received five citrate transfusions, two weeks apart. On discharge her hemoglobin was still 30%. The operator is disappointed with the results of blood transfusion in pernicious anemia. Compare this with the chart showing the result of five transfusions of whole blood given at four day intervals:

Hemoglobin 43%. Red blood cells 1,900,000 on admission.

Hemoglobin 82%. Red blood cells 4,090,000 on discharge.

Two weeks later, after injections of whole blood subcutaneously: Hemoglobin 80%, red blood cells 3,980,000.

As long as citrate transfusions are given and as long as there is a prolonged period between transfusions, the results will not be good in the majority of cases.

Difficulties of Performance: Such use of transfusion in pernicious anemia, although productive of brilliant results, is not without disadvantages and dangers.

First, if ten transfusions (which is an average number) are given, of 350 c.c. each, three donors are required. It may be impossible to find three donors of proper type in one family or among the patient's friends. If they cannot be found, it is only the wealthy who can pay the $250 to $500 necessary to obtain the blood from professional donors. To be successful, one must line up the donors and make every effort to administer the blood every four or five days.

Except for the mental aid to the patient and the temporary relief of symptoms, we have almost come to the place where we refuse to give one or two transfusions unless we can see the possibility of getting more donors within the required time.

The second danger is that of severe hemolytic reaction. Even though every precaution as to typing is taken, after a number of transfusions are given, a hemolytic reaction may occur.

The plan offered to raise the blood to 80 or 90% hemoglobin and four million or more red blood cells, to take frequent counts, and whenever there is a fall below 75 or 80% or 3,500,000 red blood cells, to give another transfusion, may be successful, but often more than seven days may have elapsed between the transfusions and the possibility of hemolysis is ever present. Because of this fact, it is our present plan to raise the blood to the high level by transfusions and then keep it there by subcutaneous injections of whole blood, 10 to 20 c.c. It is not necessary to type this donation, but a Wassermann test should be made and the blood should be injected immediately after drawing.

To recapitulate: Use whole blood. Transfuse every four days. Give smaller amount at first transfusion. If petechiæ appear above tourniquet, do not transfuse, or use the greatest caution. When the blood reaches a high level, keep it there by injections of whole blood.

It has not been my plan to show the permanency of results from transfusion, but to attempt to demonstrate what can be done in pernicious anemia with transfusions. To gain these results the blood must be administered by the whole blood method at frequent, regular intervals and in moderate amounts.

There are six pernicious anemia patients in the Jefferson Hospital at present. If they could have been seen by you on admission and their condition then compared with their condition now, a lengthy discussion would not be necessary to convince you that transfusion is a life-giving, not a life-removing agent.

CONCLUSIONS

In conclusion, several points should be emphasized:

1. That the only reason for adding sodium citrate to the blood is to prevent coagulation.
2. Coagulation does not occur with the Unger whole blood transfusion. It is the method of choice.
3. Citrated blood is contra-indicated in cases with lengthened coagulation time and reduced platelet counts.
4. Slight rises of temperature and slight chills are not harmful to the patient.
5. Severe hemolytic reactions seldom occur in patients with secondary anemia, if the patient is properly typed.
6. The blood should be typed and cross agglutinated before each transfusion.
7. A sign, warning of hemolytic reaction, is the appearance of petechiæ in the area about tourniquet, except in purpura hemorrhagica.
8. The terms "universal donor" and "universal recipient should be discarded.
9. The greatest success with transfusion is in cases of secondary anemia.
10. Blood transfusion is indicated in septicemia if a secondary anemia is present. The anemia is being treated, not the infection.
11. Patients with secondary anemia react differently from those with primary anemia, hemolytic icterus and purpura hemorrhagica.
12. In primary anemia there is an initial rise in hemoglobin and red blood cells with a rapid decline in three, five or seven days to as low or a lower level. This also occurs in purpura hemorrhagica and hemolytic icterus.
13. Transfusions should be given in these conditions every three or four days.
14. Moderate amounts of 350 to 450 c.c. produce the best results.

15. Reactions are more common after a seven day period has elapsed between transfusions.

16. Transfusions are almost specific in purpura hemorrhagica.

17. In pernicious anemia, whole blood should be given in amounts of 350 to 450 c.c. every three to five days.

18. Transfusions are given to stimulate remissions to carry the patient along at a nutrient level until a remission occurs and to relieve symptoms.

19. There is always danger of a severe hemolytic reaction in pernicious anemia.

20. When the blood has been raised to 85% hemoglobin and four million or more red blood cells, this level should be maintained by injections of whole blood subcutaneously.

21. It is not necessary to type this blood, but it is essential to inject it immediately after withdrawal from donor.

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DISCUSSION

Dr. Alexander H. Colwell (Pittsburgh, Pa.): I have had the opportunity of studying this paper of Dr. Jones' for the last three or four days and I have been impressed with the fact that he has compiled in his paper in a very brief fashion practically all of the knowledge regarding transfusion, the methods and the technic which we have at the present time. I think each man here should obtain this paper and file it because of the information so ably set forth in it.

I was much astonished when the treatment of pernicious anemia by blood transfusion was under discussion at Scranton last year that there was so much opposition to it, and I was interested to find that Dr. Stengel has begun to classify the types of anemia in which transfusion may or may not be expected to do good. It is the fate of the man practicing general medicine to handle the end results of most chronic illnesses, and the same internist who will unhesitatingly advise a palliative gastroenterostomy for an obstructing carcinoma, although he knows it is only palliative, may oppose transfusion because he knows it is only palliative. That seems unreasonable and I believe that the transfusions of blood in pernicious anemia as in other anemias, and in certain types of other chronic diseases, is one of our best methods of treatment.

I think for the benefit of those here who have not used this method because of its difficulties, it should be stated that though the difficulties are often very great and sometimes unsurmountable, the technic is easy. Anyone who can use a syringe well can do it, but the lining up of donors, the typing of the blood and the meeting of the objections of the family, etc., are certainly very great difficulties, and this should be stated honestly. Anyone who has sat up at night with a patient who has developed an intense anaphylactic reaction will feel for a certain time some apprehension every time the treatment is used, but in spite of this those of us who believe in its value persist.

Dr. George M. Dorrance (Philadelphia, Pa.): Dr. Stengel has put it very well that transfusion is a method of restoring or improving internal respiration. You put more blood in so that more oxygen can be carried from the lungs to the different parts of the body. You are putting more corpuscles in so that you can carry more blood to the blood-making organs, thus stimulating them. Dr. Stengel did not mention certain serum reactions. For instance, in the melena mentioned, you get a specific serum reaction.

In regard to the different methods of transfusion, I think I have used most of them. Dr. Jones did not say anything about the vein to vein method. We developed that because the artery to vein was very difficult and the blood really should go into the veins and then filter into the arteries. There is another method which was not mentioned in which we use a glass cylinder lined with paraffin. This method was first used by Kempton and has been modified by Percy of Chicago. It is simple and perfectly easy. I have used it frequently. For severe sudden hemorrhage the citrate method is the one you can use in a few minutes. In other cases, you may use the one you choose. I think, as a rule, the whole blood is best. The doctor said that you must not give citrated blood in cases of long coagulation time. According to my work, this is not correct. It has not any effect on the clotting time of the blood in the body, but of course in the blood outside of the body, the clottting time is greatly lengthened. There is no question that more than one transfusion must be given in most cases.

We have had bad results in purpura hemorrhagica in quite a number of instances, and so we fear these cases. In pernicious anemia, it has not held up as we wished although it is a great help in carrying these patients along for certain periods. The splenic anemias have not been permanently helped.

I think one should be careful in using transfusion for all chronic diseases such as late tuberculosis, etc. I think it is a mistake in these cases, for it places transfusion on such a plane that it makes people lack confidence in the method. In the sudden hemolytic reaction following transfusion or the anaphylactic reactions, we have found atropin to be of great value. You can give any number of transfusions.

To avoid reactions in the citrate method, not more than 500 c.c. should be given at one sitting. There are more reactions in the citrate method but if you will have the cases carefully typed and after you have them typed, match them up, you will find this method useful. There are more than four groups of blood. There is an extra one and we do not know where to place it. I do not think any one method is useful in all cases, but I believe the Kempton-Brown for noncitrated blood is the simplest. The citrate method is the simplest method and in our hands has proved to be the safest. The syringe method is satisfactory in experienced hands.

Dr. W. W. G. Maclachlan (Pittsburgh, Pa.): I believe the point for us to keep in mind is that every case of pernicious anemia is a case unto itself. I agree with Dr. Stengel, that in some cases transfusion is of little or no avail and that in some we may hurry the end by its use. It would be well if we remembered the clinical picture of cases of pernicious anemia that were seen before the days of transfusion; some lived eighteen months, some for several years and a few for many years. We have all seen cases of pernicious anemia transfused and felt sure that we had saved the patient's life temporarily and yet we can recall the experience of Willard Stone of Toledo, who had a case of pernicious anemia with a blood count of two hundred and eighty-five thousand red cells and a hemoglobin under ten per cent, who was not transfused but was given arsenic and who made an excellent recovery in five months and lived for over six years. As Dr. Stone remarked, if he had been transfused he certainly would have thought that this procedure saved the patient's life. There is no question that transfusion brings on a remission more quickly in some cases, but can we say that it brings on a remission that otherwise would not have appeared? I think we cannot answer that question, although it is a very important one.

I agree with Dr. Dorrance that if we keep within two to four hundred c. c., the citrate method will show no more reactions than the whole blood. A few years ago I transfused pernicious anemias every day, counted the blood each day and observed the number of reticulated cells. I think that an increase over the normal in reticulated cells of two or three per cent, or even higher, with this increase keeping up over a period of time is a valuable indication that a remission is likely to occur. It is interesting that in secondary anemias one may, with a small amount of blood, produce a considerable increase in red cells—almost a million in twenty-four hours—by the use of two hundred c.c. of citrated blood, without any increase in reticulated cells. This does not occur in pernicious anemia. It is likely that the threshold in pernicious anemia is lower and the reticulated cells escape into the blood stream more readily. In secondary anemia this does not occur, for the bone marrow in this condition is a normal marrow, whereas in pernicious anemia it is not. The value of transfusion, it seems to me, from the point of saving life is not in the primary but in the secondary anemias. Dr. Litchfield will recall a case of staphylococcic pyemia in which the patient with a very severe secondary anemia, made a most excellent recovery. I think, in this type of case, transfusion is of great value. I have seen no effects following transfusion in streptococcic infections either of the hemolyticus or of the viridans type.

Dr. A. I. Rubenstone (Philadelphia, Pa.): I wish to agree heartily with Dr. Jones with reference to the superiority of whole blood over citrated blood in transfusion. Citrated blood gives more frequent and marked reactions than whole blood. With citrated blood there is more danger of thrombosis. The blood is more toxic because of its exposure. Its reaction is affected and the red cells themselves distorted. The argument that citrate transfusions are easier to perform is very good, but that should not be a consideration when human life is at stake. I think every community, no matter how small, should try to develop one man who is able to give whole blood transfusion. I think the probability is that the bad results cited by Dr. Stengel may be due to citrate transfusion. If so, he was certainly justified in his statements.

With reference to the apparatus used, I have always found the simplest apparatus in medical practice is the most useful. Particularly is this true of transfusion of whole blood where time is a factor. The objections that I found with the Unger apparatus, are the chances of coagulation while the blood flows through the rubber tubing; also in cases where the patient is septic, one cannot absolutely guard against transferring organisms to the donor. I was therefore led to construct a simple apparatus, which is a needle so modified that by means of 50 c.c. Leur syringes, large transfusions can be done with great rapidity and little danger.

Dr. Robert A. Keilty (Danville, Pa.): I wish to stress the point raised by Dr. Stengel that every case should not only be grouped to determine the blood type, but that even where time is a factor the donor and the patient should be individually matched. Every case showing the slightest agglutination should be thrown out. I think this is one of the most important factors in transfusion work today and where followed out, the number of reactions will be reduced to a minimum. I should also like to second the fact that a patient may change his group after transfusion and this same donor should not be used a second time without a complete individual blood matching, especially when another donor has been used in the meantime.

Dr. Jones (in closing): I did not speak of the cause of reactions because there was not time. Dr. Dorrance suggested that the presence of more than four types of blood may be responsible for some of the reactions. This possibility is ruled out by cross agglutinating before transfusion, for no matter how many types there are, if the bloods match perfectly a reaction will not occur from that cause. The surgeon is apt to prefer the method of transfusion which requires the use of the scalpel and possibly that is why Dr. Dorrance prefers the Kempton-Brown to the Unger method. It is a mistake, I believe, to expose and incise a vein in doing a transfusion. With our present method of giving smaller amounts of blood more frequently, venesection may eliminate the possibility of giving a large number of transfusions. Except in children, I have never exposed a vein to perform this measure.

The addition of sodium citrate to blood does reduce the coagulation time. Certainly it reduces the number of blood platelets, and if we hold to the belief that the platelets are concerned in coagulation of blood, then whenever we wish to improve blood coagulation the citrate method should not be used.

Dr. Keilty mentioned the importance of discarding the terms universal donor and universal recipient. I feel that this point can hardly be too strongly emphasized, for it is possible to get agglutination as marked in two bloods of the same type as in two bloods of different types and a severe reaction is almost certain to follow. Cross agglutination should be done in every case, and I also advocate cross agglutination before each transfusion, even though the same donor is used, because certain individuals change type after a transfusion.

It has never been my privilege to use the method devised by Dr. Rubenstone but I have used most of the others and it is my firm belief that the Unger whole blood method is superior. Dr. Rubenstone discarded the Unger method because he found that the blood clotted in the tubing. After a number of transfusions, I split open the rubber tubing and found it clear. Also after every transfusion the salt solution which is run through the tubing failed to show evidence of clot formation. Of course if the operation is slowed for any reason and the blood stands idle in the tubing long enough, clotting is inevitable. This, however, should not be permitted.

BASAL METABOLISM*

THE VALUE OF ITS ESTIMATION IN VARIOUS DISEASES

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The practice of modern medicine makes it incumbent upon every physician, among other

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things, to practice and teach preventive medicine, and to recognize diseased conditions in their incipiency. The ability to make an early diagnosis is attained largely by careful history taking, making thorough physical examinations, coupled with ample clinical experience. Human skill thus obtained is enhanced by the use of tests and laboratory procedures of recognized value, the results of which are considered in connection with the clinical findings.

The physician, to meet fully the requirements of the practitioner of modern medicine, must be cognizant of the various laboratory tests of accepted value and the interpretation of their results. It is given to relatively few physicians to be able to serve their patients well by relying solely upon their clinical judgment, entirely disregarding the laboratory findings in the diagnosis and the treatment of diseases.

It has been stated often, and unfortunately is true, that many physicians, especially among the younger practitioners, are too prone to rely upon the laboratory reports for a diagnosis, neglecting to take a careful history and to make a thorough physical examination. This practice will sooner or later bring great disappointment and discredit to the physician.

The estimation of the basal metabolic rate in connection with the diagnosis and the treatment of disease processes is of value when properly interpreted in the light of our present knowledge of the subject:

1st—As an aid in the recognition of diseases which have as one of the cardinal features an increased or a decreased metabolic rate.

2d—To measure the degree of disturbance of normal metabolism as indicated by the figure to which the basal metabolic rate is raised or lowered.

3d—To aid in the differential diagnosis of conditions which resemble each other in symptomatology and physical findings except in the basal metabolic rate.

4th—As a guide to the proper treatment, medical, surgical, x-ray or radium, and to measure the results of these forms of treatment.

To-day the best laboratory procedure that has been developed as an aid in the recognition and treatment of thyroid disturbances is the determination of the basal metabolic rate. All investigators are agreed that the basal metabolic rate varies with the thyroid gland activity. Although the pituitary and ovary influence basal metabolism, they do so to a much less degree than the thyroid gland. Pernicious anemia, leukemia, severe diabetes mellitus and cancer may increase the basal metabolism, and starvation and wasting diseases may decrease it.

It is not always possible to ascertain the degree of disturbance of the thyroid gland activity by the symptoms or by the increase or the decrease in the size of the gland.

The determination of the basal metabolic rate under the following conditions is most valuable in the recognition of the nature and degree of the disorder:

1. An enlarged thyroid with symptoms of hyperthyroidism.
2. An enlarged thyroid gland without symptoms.
3. An enlarged thyroid gland with symptoms resembling those present in hyperthyroidism but due to causes other than hyperthyroidism.
4. No apparent enlargement of the thyroid with other symptoms of hyperthyroidism.
5. An enlargement due to a tumor of the thyroid gland in which there is either no change or an increase or decrease in the activity of the thyroid gland.
6. An enlarged thyroid gland with symptoms of hypo-activity of the thyroid gland.
7. No apparent change in the size of the thyroid gland with symptoms of hypothyroidism.
8. A suspected substernal goiter.

The determination of the basal metabolic rate should be made in every case of goiter with impairment of the health, to determine if the illness is dependent upon the thyroid gland enlargement or whether it is due to other causes. There are individuals in poor states of health, with or without enlargement of the thyroid gland, with the other symptoms commonly found in hyperthyroidism, the etiology of which it is difficult to establish in the absence of the estimation of the basal metabolic rate.

The interference with so vital an organ as the thyroid gland, especially by surgical procedure, has resulted in the symptom complex of hypothyroidism being added to the disease actually responsible for the symptoms attributed to the disordered action of the thyroid gland. A number of cases of so-called disordered action of the heart seen in soldiers during the recent war, patients suffering from nervousness, weakness, loss in weight, incipient tuberculosis, syphilis, and gastro-intestinal disturbances have been diagnosed and treated as cases of hyperthyroidism. These conditions are rendered more difficult to diagnose if an enlargement of the thyroid gland is present. The determination of the basal metabolic rate is of the greatest help in ruling out thyroid gland etiology and assisting, therefore, in directing the proper course of treatment.

A number of the thyroid gland enlargements, especially in young women, in women during the menstrual period or during pregnancy, which are functional in character, cause considerable anxiety and worry. A basal metabolism determination may be of the greatest value, thereby allaying unnecessary fears by finding a normal basal metabolic rate, and fortifying the physician in his diagnosis. In the absence of the knowledge of the basal metabolic rate, normal thyroid glands have been removed and a state of hypothyroidism has resulted.

In tumors of the thyroid gland the nature of the growth may be such as either to destroy the gland tissue and produce a condition of hypothyroidism, or to stimulate the thyroid to increased activity. Some tumors produce no variation in the basal metabolic rate.

Patients presenting adenomata of the thyroid gland, in approximately twenty per cent of the cases develop toxic symptoms due to increased thyroid activity. In these twenty per cent of cases presenting toxic adenomata, the serious symptoms develop on an average of sixteen years after the onset of the adenoma. Patients with benign tumors of the thyroid gland may develop symptoms resembling those due to hyperthyroidism, but a persistent normal basal metabolic rate will be of assistance in ruling out increased activity of the thyroid gland as being the etiological factor.

There is another group of individuals who present all or some of the symptoms of hyperthyroidism, in which the thyroid gland is not palpable. The estimation of the basal metabolic rate under these conditions reveals the actual degree of activity of the gland.

Enlargement of the gland may occasionally be accompanied by a state of hypothyroidism, and under such conditions the determination of the basal metabolic rate will be of the greatest help in prescribing the proper course of treatment.

In all suspected cases of underactivity of the gland in which but a few symptoms of hypothyroidism may be present, the determination of the basal metabolic rate may throw light on the underlying condition.

In exophthalmic goiter the determination of the basal metabolic rate is of help in deciding upon the kind of treatment, the frequency of treatment, the result of treatment, the justification and safety of surgical procedures, the severity of the intoxication, and the prognosis.

The basal metabolic rate is no index and will not measure the degree of associated degenerative cardiorenal vascular changes in thyroid disturbances.

In polyglandular disturbances the estimation of the basal metabolic rate may be of the greatest help, especially in determining that other glands than the thyroid are largely at fault.

The determination of the basal metabolic rate has been of the greatest aid in the diagnosis of what may be determined borderline cases. Three diseases commonly confused in their early stages are hyperthyroidism, neurocirculatory asthenia, and pulmonary tuberculosis, especially if an enlargement of the thyroid gland is present.

The symptoms that are common to patients with hyperthyroidism and neurocirculatory asthenia, are tremor, an accelerated pulse rate, the marked response in the rate of the heart to the slightest effort, and other evidences of instability of the nervous system. These patients are conscious of the heart disturbances, experience dyspnea and precordial distress or pain. It is most important under these circumstances to have a full knowledge of the basal metabolic rate, performed on at least three different occasions, to determine for or against increased thyroid activity. With this information one can with more certainty diagnose these difficult cases. On a number of occasions patients in the hospital dispensary have presented physical signs in the chest, which if active, could account for the slight fever, tachycardia, precordial pain, loss in weight, tremor, but in the presence of a goiter it was difficult, without the knowledge of the basal metabolic rate, to determine if the symptoms were due to activity of an old tuberculous lesion or to an overactive thyroid gland.

The proper classification of tachycardias as to the etiology is often a difficult task. One must always think of an overactive thyroid as the possible underlying cause. A knowledge of the basal metabolic rate will be of the greatest help in drawing conclusions, especially if there are few, if any, accompanying symptoms or physical signs.

Kay (*Jour. Amer. Med. Asso.*, 79:2149, Dec. 23, 1922), in a study of one hundred cases previously diagnosed as hyperthyroidism, after a prolonged period of observation reclassified them. Thirty of the one hundred patients were found to have hyperthyroidism, six were hypothyroids, and the majority of the remainder were nervous or mental diseases. Kay contends that the basal metabolic rate was of the greatest help in arriving at definite conclusions and checked with his clinical findings in all but one case. The hypothyroid cases were the most difficult to diagnose, both clinically and by laboratory methods, with the exception of the basal metabolic rate, which in most of the cases made the diagnosis. The basal metabolic rate is of the greatest value in the diagnosis and treatment of obesity.

Obesity is commonly the result of one of two causes: first, in the majority of cases it is due to overeating and the lack of physical exercise, with a normal metabolic rate as measured by the surface area, and second, to diminished activity of the thyroid gland and hypophysis. This latter group of cases always presents a subnormal basal metabolic rate. The differentiation between these two types of obesity is of importance in prescribing the treatment, since the administration of thyroid extract to the obese, due to hyperthyroidism, produces prompt and brilliant results. On the contrary the obesity due to overeating and physical inactivity may be distinctly harmed by even small doses of thyroid extract, producing untoward results, such as tachycardia, nervousness, restlessness, diarrhea and sweating. The determination of the basal metabolic rate in obese individuals suffering from organic heart disease is of prime importance, especially if hypothyroidism is believed to be the underlying cause of the obesity. Alarming symptoms may be produced in obese patients suffering from heart disease, by the administration of thyroid extract, if the etiology of the obesity be overeating and physical inactivity.

The nervous manifestations at the menopause frequently cause considerable difficulty in diagnosis, especially if there are nervous symptoms with or without a change in the size of the thyroid gland. We are familiar with the good and the bad results from the use of thyroid gland extract for these symptoms. A knowledge of the basal metabolic rate will help to decide for or against the use of thyroid therapy.

In many diseased conditions there are phenomena which of themselves will increase the basal metabolic rate—for example, chills, sweats, fever, dyspnea, exercise, food, emotion, apprehension, anger, fright, tremor, menstruation—and these in themselves may account for variations of the basal metabolic rate.

In thyroid disturbances one cannot but be convinced that the determination of the basal metabolic rate has been a distinct step forward in the assistance it gives in the direct diagnosis of diseases of the thyroid gland, in the differential diagnosis of a large group of conditions resembling it, in measuring the effectiveness of treatment and in the prognosis. Certainly this procedure is entitled to take its proper place among the valuable laboratory tests.

The basal metabolic rate must be considered only as an adjunct in arriving at our final conclusions, but when carefully performed the results obtained can justly be relied upon.

The problems associated with the large group of diseases of the thyroid gland are far from solution, but if any progress has been made recently it has come from the increased interest which basal metabolism estimation has stimulated.

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DISCUSSION

Dr. Roy R. Snowden (Pittsburgh, Pa.): Dr. Mohler has very ably and thoroughly covered this subject, and sensibly also. The estimation of the basal metabolic rate is a very valuable aid in the differential diagnosis or the study of thyroid conditions, but it must be remembered that it is only an aid, as Dr. Mohler has emphasized. The diagnosis must never be made on the report of the basal metabolism alone. There must be some symptoms that will substantiate the report. The reasons for this are quite simple when we consider the technic involved in the test. We have quite a complicated apparatus for carrying out the tests, with many joints and tubes, in any one of which a leak may occur during the examination and this will be registered and give rise to an error in interpretation. Many other things—nervousness on the part of the patient, or negligence in any of the details either at the beginning or end of the test will give rise to errors. Sometimes peculiar conditions will enter into the interpretation. I recall one case in which there was a very high rate and nothing could be found in the apparatus but it was noticed that the patient was swallowing all the time and he must have been swallowing too much oxygen for this disappeared when he stopped. All these tests must be received with a certain amount of caution on the part of the physician and surely must be checked up by signs and symptoms before any confidence is placed in them.

After getting all these things, what does it mean? It actually means that so much oxygen is being taken in by the patient. This is transcribed into terms of oxygen and also of heat taken into the body. It is considered that the thyroid gland is the organ which regulates the absorption of oxygen and the production of heat. In this way we can infer what the thyroid gland is doing but there are other effects which enter in. These have been mentioned by Dr. Mohler. The question of fever and of food must all be considered carefully when this test is used. There is no question of its value but in order to use it the physician must first make sure that everything is carefully done and properly checked up. He should then correlate the test with the physical signs and symptoms and from that he has a right to infer that he is able to estimate what the actual thyroid activity is.

Dr. Lawrence Litchfield (Pittsburgh, Pa.): I wish to say just a few words about this very interesting paper and I wish to say first, for fear I should be misunderstood, that this apparatus and method has quickly taken a place in our armamentaria that very much needed to be filled and it is a method that we would not any of us think of doing without. On the whole, I am inclined to think that it has been overdone—the use of this apparatus and the reliance upon the results—probably largely on account of the great energy that has been displayed by the manufacturers of various instruments and their most cheerful advertisements.

There is one interesting question which this discussion naturally brings up and that is the question of whether or not you can have thyrotoxicosis without an increase of the metabolic rate. As you know, Joe Miller of Chicago has written two or three very interesting papers on what he calls borderline cases, and he claims that there are many cases of thyrotoxicosis that have not gone far enough to show an increased metabolic rate. I think the reaction of the profession at first was very antagonistic to that belief but I have recently had a conversation with Dr. Marine in which he said that he believed Miller was right. I have had a case under observation for several years and have been unable to make up my mind as to whether she has a low-grade tuberculosis or slight thyrotoxicosis. She has a slight von Graefe, a very slight rise in temperature every day, and very slight nervous or mental activity will send up the pulse and temperature very markedly. She has been treated by Marine, by the combined talent of the school at Saranac Lake and by myself, but no one knows yet whether it is low-grade tuberculosis or thyrotoxicosis.

The remarks of Dr. Mohler on obesity are very timely. A great many of us are getting part of our income from treating obesity and are not paying enough attention to the metabolic rate.

DR. ALFRED STENGEL (Philadelphia, Pa.): I wish to suggest to Dr. Mohler that he change the order in which he used the three terms—neurocirculatory asthenia, effort syndrome and irritable heart. This will be a graceful act on the part of a Jefferson man to his distinguished predecessor, Jacob M. DaCosta, and it will help to call attention to a very interesting paper DaCosta wrote after the Civil War. It may help to bring out in some relief the circumstance that the medical profession in this country so completely forgot this important contribution of one of our greatest clinicians of the past and approached the great World War knowing nothing about DaCosta's "irritable heart."

DR. W. EGBERT ROBERTSON (Philadelphia, Pa.): Just one question in regard to the diabetic. I understood Dr. Mohler to say that there could be a rise in metabolism. From the very principle of the thing this is impossible except in cases of acidosis. The rate is not raised in the uncomplicated cases. As a matter of fact when foods are taken and assimilated as the result of insulin, as in the juvenile type, one of the symptoms is a rise in the metabolic rate.

Regarding the apparatus, one the closed and the other open, the closed is best exemplified by the type of Sanborn and then next the Benedict, and the open type is best shown in the Tussar. The two difficulties with the closed type exist in the many possibilities of error, most of which were pointed out by the Doctor and one which has almost been overcome by the chimograph attachment to the instrument. This does not exist in the ordinary apparatus. The advantage in the Tussar is that it gives you the respiratory quotient. Another advantage in the open methods is that you cannot only read them but you have the monographic type, so that whatever the errors may be they are based on 200 per cent or 400 per cent, and if you are allowed this error you can check up by the original reading and by the monographic reading.

DR. MOHLER (in closing): In my paper I did not emphasize that which I believe to be most important, namely, the care that must be taken in performing the tests if the results are to be of value in the diagnosis of disease. If it is possible, I prefer to perform the tests personally, the reasons being obvious to physicians doing this work. Nonmedical technicians do not always fully realize the importance of guarding against every possible error in the technique, as well as the proper preparation of the patient, and the necessity for ideal conditions while the test is being performed.

The late Professor J. M. DaCosta, of the Faculty of the Jefferson Medical College, fully recognized and described, many years ago, the "irritable heart," or "soldier's heart" (DaCosta), a cardiac neurosis referred to in the World War under many different terms.

The basal metabolic rate in diabetes mellitus is more often low than high, the latter being found in diabetes mellitus with complications.

In presenting this subject I have tried to be as conservative as one can justly be, in an endeavor to acquaint the general practitioner with the aid he may expect from the estimation and interpretation of the basal metabolic rate. It is true that, as in many other different tests, some workers have made too extravagant claims.

FOREIGN BODIES IN RESPIRATORY TRACT AND ESOPHAGUS

CLINICAL NOTES OF GENERAL INTEREST*

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The relatively great frequency with which foreign bodies enter into the etiology of diseases of the respiratory tract and esophagus of children is an important point to be kept in mind in the practice of medicine. These children are frequently too young to give any assistance in the history and unless the parents or older children actually observe the accident of the presence of a foreign body in the mouth of the child its possibility as a cause of the illness may go unrecognized.

A small child instinctively puts all objects which he can hold in the hand into the mouth. Anyone can make this observation by watching the children in the ward of any hospital. When one thinks of this and the comparative ease with which a small foreign body passes through the glottis or into the esophagus, the mystery is why we do not have more foreign body cases in little children.

That there are many foreign body cases in children passing from one physician to another undiagnosticated is borne out by the histories. Sometimes repeated attacks of bronchitis or pneumonia are due to the presence of an unsuspected foreign body in the lung so obscure at the onset of the original illness that the foreign body history is undiscovered for weeks or months. Eventually these cases develop lung abscess or are diagnosed as pulmonary tuberculosis with negative sputum and unless the foreign body history is accidentally elicited the case may end fatally.

There is an erroneous idea held by some physicians and perpetuated in a few textbooks that a sharp foreign body in the lung will cause pain and hemorrhage by jagging but this is not substantiated by the histories. There may not be any signs of bleeding even after prolonged sojourn of a sharp foreign body in the lung and certainly there is rarely pain from jagging.

With the passage of a foreign body into or through the glottis there may be a sudden attack of choking similar to that experienced when something "goes down the wrong way." This attack may be slight, with no symptoms following the initial attack, or it may be severe with an attack of dyspnea accompanied by a degree of cyanosis. The symptoms depend upon the size, shape and character of the foreign body aspirated and its final lodgment in the respiratory tract. In the larynx it usually gives rise to hoarseness, aphonia and some dyspnea. A foreign body in the trachea is usually accompanied by a characteristic symptom which Jackson has designated as the "asthmatoid wheeze." If the foreign body lodges in a bronchus it may be symptomless for some time after the initial attack.

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* Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 4, 1923.

Foreign bodies usually lodge in the esophagus of small children at the level of the sternal notch. The symptoms depend upon the character and shape of the foreign body and its relation to the esophageal walls. There may or may not be interference with swallowing, depending upon how much of the lumen of the esophagus is obstructed by the foreign body. There may be interference with swallowing of solid food and liquids may pass easily, or liquids and even saliva may be regurgitated. A coin may lie transversely in the esophagus in such a position that even some solid food will pass without difficulty. If, however, the coin changes its position and obstructs the lumen of the esophagus, even saliva may be regurgitated.

If esophagitis develops from retention of food at the site of lodgment of the foreign body the child will probably have an elevation of temperature; otherwise the temperature is not elevated, unless the epithelium is punctured or eroded.

Observations have shown that foreign body histories are sometimes coincident with the onset of the acute exanthemata. All cases of the acute exanthemata in which obscure respiratory or esophageal symptoms are unaccounted for, should be examined for the presence of foreign body. Several of our cases illustrate this coincidence of foreign body lodgment with the onset of measles and chickenpox.

Case I: P. F., male, 5 years of age, was referred by Dr. D. W. Cameron at the Western Pennsylvania Hospital, with the following history:

On January 6, 1922, the child was admitted to the Western Pennsylvania Hospital with a history of having had pneumonia five weeks previously, followed by empyema. The child was very ill and Dr. Cameron did a rib resection on the left side to establish free drainage for a large pleural pus collection. The cavity was Dakinized and after five weeks of profuse drainage a roentgenogram showed the left lung full of pus. At this time the child was very ill, emaciated, having profuse sweats and the temperature was making wide excursions, frequently rising to 105° F. with a sudden drop to 100° F. Upon questioning the parents further, the mother now thoroughly alarmed, admitted the history or aspiration of a peanut previous to the original illness. Dr. Cameron felt that the patient would die very soon unless relief could be afforded and asked me to bronchoscope the child. The boy looked so very ill that I hesitated as to the advisability of introducing the bronschoscope. In consultation with Dr. Cameron, we decided in favor of bronchoscopy without anesthesia, and I evacuated bronchoscopically through the mouth a large quantity of thick stringy pus with a very foul odor. Beneficial results promptly followed; the temperature remained lower, and five days later I again evacuated a large quantity of pus not so foul as at the previous bronchoscopy. Two weeks later drainage through the thoracotomy wound ceased and I evacuated a large amount of pus bronchoscopically through the mouth. Three weeks later I evacuated a small amount of pus bronchoscopically through the mouth. The child began to gain rapidly in weight, improved greatly in physical condition and was discharged well April 7, 1922 (three months after admission).

Comment: Undoubtedly the thoracotomy saved the child's life in establishing free external drainage for the large pleural pus collection. The case also illustrates the efficacy, in certain cases, of drainage of the lung by bronchoscopic aspiration. It is, however, impossible efficiently to drain the pleural cavity by peroral bronchoscopy. It is logical to suppose that the primary exciting factor in this case was a peanut kernel that had been aspirated and subsequently coughed up after having caused a pulmonary abscess with secondary empyema.

Case II: A. K., female, 13 months of age, referred April 7, 1922, by Dr. G. E. Peters of Masontown, Pa., with the following history: Six months or more previously the parents noticed that the baby breathed heavily, but were told by the physicians consulted that the child had a cold. Treatment proved of no avail, and upon consulting Dr. Peters he fluoroscoped the child and discovered a nail in the esophagus.

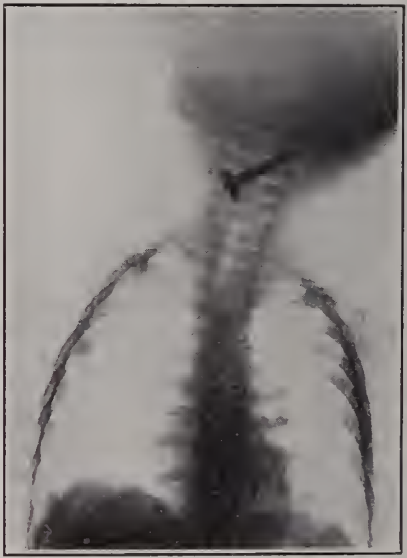

Fig. 1. Roentgenogram showing nail in esophagus of child.

Upon admission the child had a most peculiar crowing respiration and swallowed very slowly. The roentgenogram (Fig. 1) by Dr. G. W. Grier showed a shingling nail (such as is used in applying tar paper roofing), point up and to the left, and the head downward and to the right. At esophagoscopy, without anesthesia, the mocous membrane of the upper end of the esophagus and hypopharynx were ulcerated and edematous. The point of the nail was imbedded and the head firmly fixed. After removal of the nail (Fig. 2) the child could nurse immediately without difficulty and the dyspnea was relieved in three days.

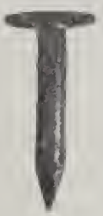

Fig. II. Nail removed from esophagus of 13 months' old child.

Comment: The child owes her life to Dr. Peters' recognition of the possibility of foreign body notwithstanding the absence of a foreign body history. He told me that the nail looked so large and the baby so small that he could scarcely believe that the foreign body was not lying external to the patient and looked about the table to make certain.

Case III: M. S., male, aged 2½ years, referred June 9, 1923, by Dr. M. C. Tarr, Wellsville, Ohio, with a history of having swallowed a quarter three weeks previously.

Upon admission to the Presbyterian Hospital the child looked ill, was suffering from water starvation and seemed very languid. Roentgenogram (Fig. 3) by Dr. G. W. Grier showed a coin at the level of the sternal notch. At esophagoscopy, without anesthesia, the esophagus was found to be ulcerated and the coin was covered with granulations. After esophagoscopy the child seemed very stupid, temperature 102° and in 24 hours he was covered with a rash which proved to be measles. The recovery was uneventful.

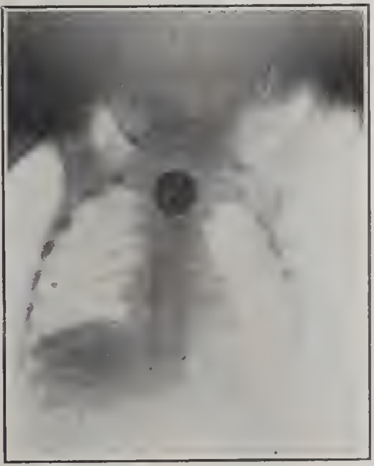

Fig. III. Coin in esophagus of child suffering with measles.

Some of the family had had measles and if the child had developed measles simultaneously with his esophageal symptoms the foreign body history would possibly have been overlooked.

Case IV: V. D., female, 8 years of age, was admitted to the Presbyterian Hospital, January 7, 1922, with a history of having aspirated a brass paper fastener five days previously, for the removal of which an unsuccessful bronchoscopic attempt had been made.

Upon admission the child looked pale, complained of "sore throat" and seemed very ill, temperature 104°.

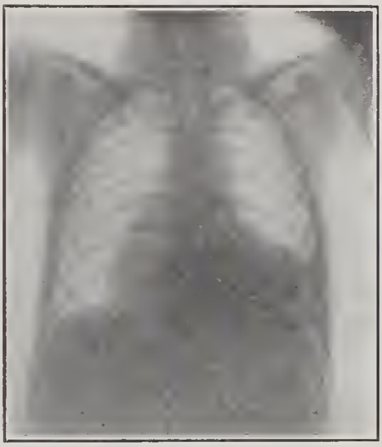

Fig. IV. Brass pa[illegible] with an attack of chickenpox.

The roentgenogram (Fig. 4) by Dr. G. W. Grier showed the fastener in the right lower lobe bronchus, point up. Physical examination by Dr. J. H. Barach revealed suppressed breathing over the right lower lobe and other evidence of bronchial obstruction. The child seemed so ill that I decided to delay any attempt to remove the foreign body until she recuperated from the bronchoscopy done prior to admission, an interval between bronchoscopies being always advisable in children. The temperature remained between 103° and 104° for 24 hours, when she developed a rash which proved to be chickenpox. We decided it was better to bronchoscope without delay as there was no contraindication to operation other than the temperature. At bronchoscopy, without anesthesia, I removed the fastener (Fig. 5) from the right lower lobe bronchus. The temperature immediately dropped to normal and recovery from chickenpox and bronchitis was uneventful.

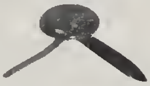

Fig. V. Brass paper fastener removed from bronchus of child during an attack of chickenpox.

Comment: Bronchoscopy, without anesthesia, during the attack of chickenpox was not only not followed by reaction or unfavorable symptoms, but on the contrary, immediate improvement followed.

Case V: E. M., female, aged 18 months, a Syrian, was referred February 24, 1922, by Dr. R. C. Johnston of New Kensington, Pa., with a history of having aspirated a bean. Upon admission to the Allegheny General Hospital, the child was very dyspneic and had some cyanosis. A roentgenogram by Dr. W. H. Ray showed signs of a nonopaque foreign body in the left bronchus. The breathing was very labored on the operating table but was somewhat relieved after bronchoscopy without anesthesia. At bronchoscopy I removed a Syrian bean (Fig. 6) from the left main stem bronchus which had the appearance of a very dry hazelnut. The breathing was relieved for several hours but became labored, due to subglottic swelling, and it was necessary to do tracheotomy four hours later. Three days later the child developed a rash which proved to be chickenpox. Convalescence was uneventful, though I delayed decannulation until she recovered from chickenpox. She was decannulated March 30, 1922, and discharged well the next day.

Fig. VI. Syrian bean removed from bronchus of child during incubation period of chickenpox.

Comment: Bronchoscopy, without anesthesia, and tracheotomy done during the incubation period of the chickenpox did not produce any untoward symptoms.

CONCLUSIONS

1. The possibility of foreign body even without a definite history should be borne in mind in diagnosticating diseases of the respiratory tract and esophagus of small children.

2. Obscure respiratory and esophageal symptoms occurring during the incubation period of the acute exanthemata in children may be due to the presence of a foreign body.

3. Endoscopy for the removal of foreign body, when done without anesthesia, is not contra-indicated in children during an attack of the exanthemata.

4. Pulmonary abscess in small children due to aspiration of a peanut kernel does not clear up until evacuated bronchoscopically, even though the peanut kernel has been previously coughed up.

Westinghouse Bldg.

DISCUSSION

Dr. Chevalier Jackson (Philadelphia, Pa.): This paper is full of very important points. One that struck me was in regard to the absence of pain with sharp foreign bodies. The other day a practitioner came in and apologized for not having paid any attention to foreign body history. He did not see how it was possible that a sharp-pointed safety pin in the lungs produced no pain and no symptoms. He had in mind a struggling and choking, a feeling of impending dissolution such as comes from a few drops of water or a crumb of bread in the larynx, and how it was that a safety pin could go down there and the child feel no pain, he could not understand.

Another point brought out by Dr. Patterson is the presence of respiratory symptoms in esophageal foreign body. We are getting to the point where most of the profession think of overlooked foreign body in case of acute or chronic chest disease, but they do not think of esophageal foreign body. A patient came in with a ring in the esophagus, a child 13 months old, and judging from the date on which the ring was missed, it was clear it had been in the esophagus a year. Foreign body had not been thought of in that time. So I think we shall have to add to the old statement that foreign body should be excluded in every acute and chronic chest case, the proposition of Dr. Patterson that all children in hospitals should be rayed for foreign body before they are discharged. I think we can go a step further and say that all children in the schools ought to be rayed for foreign body, and perhaps even a step further yet and say that children outside of hospitals and schools should be rayed—in other words, that all children ought to be rayed.

That seems radical, but it is no more radical than when it was first proposed to insist upon the examination of the throats and eyes of children in the schools to see the condition of tonsils and adenoids. I remember here in Pittsburgh in old City Hall, hearing a councilman, in a towering rage, argue that such an ordinance would deny the individual parent his constitutional right to select his own physician. But I believe the day is coming when all school children will be rayed for foreign body as well as for tuberculosis and other infectious ailments.

When I look at these roentgenograms and see the number of sharp-pointed foreign bodies, and realize that if allowed to remain, each one of them would have been fatal, and when I realize that the slightest mechanical mistake in their removal would have killed the child, I congratulate Dr. Patterson on her skill, her judgment, and upon the accuracy with which she planned and executed the bronchoscopic removal in the respective cases.

Dr. William B. Chamberlin (Cleveland, Ohio): I want to emphasize a point which Dr. Jackson has made, and that is the importance of routine x-ray examination. I have been very much struck with a comparison of the work done in this country and that done in England. In a recent conversation with Dr. Frazer, who was over here, also with Dr. Thompson of Manchester, an associate of Sir Wm. Millugan of Manchester, Dr. Frazer told me that he had had but three cases in his experience where he had done an esophagoscopy. These men admit that the reason they do not find these cases is because they do not look for them. I think the reason we find these cases is on account of the wonderful work we have done with the x-ray.

Recently I had a case of a tack in the right bronchus, in a child two years old. The only reason this tack was found was because an x-ray examination was made. Another interesting case was that of a man who had a peculiar cough—a cough associated with the swallowing of food. He never had a cough at any other time. The doctor thought it would be a good plan to give the man a bismuth meal and have an x-ray taken. This was done and the picture showed very beautifully the entire outline of the bronchial tree. In other words, the bismuth meal had gone, not into the esophagus or stomach, but into the lungs. The reason for this cough was that there was an esophageal-bronchial fistula at the left main stem bronchus. The man had a 4-plus Wassermann. For months he was given food and drink through a tube, but he came into my office recently in perfect health. The fistula was found because of the thoughtfulness of Dr. Tucker in having the x-ray made.

The reference of Dr. Patterson to a case that had been treated for some months reminds me of a case I had not long ago, a woman who had literally taken gallons of cough syrup. One of my assistants was the first man to make a laryngeal examination in order to find the cause of the cough. He found a triangular piece of bone imbedded in the larynx. I started to remove this bone and got half of it, and the other half went down into the left main stem bronchus, from which it was removed through the bronchoscope.

POINTS OF CONTACT BETWEEN INTERNAL MEDICINE AND PSYCHIATRY*

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INTRODUCTION

Undeniably, modern advances in medicine have lessened the gap between internal medicine and psychiatry, and the connecting link in the chain of mutual understanding and coöperation is much stronger now than it was formerly. However, it would be useless to assert that the link has been forged as firmly and connected as satisfactorily as thinking men in either specialty desire that it should be. Psychiatry and internal medicine are not in the same close accord, and there is still lacking that intimate relationship which exists, for instance, between internal medicine and pediatrics or obstetrics or even between internal medicine and surgery.

Some of the reasons for the separation of these two branches of medicine reach back into the dim past. For centuries the individual who was insane was the poorest creature of chance circumstances and prevailing superstitions. Sometimes he was revered as the tongue of the oracle or the favored of heaven; more often he was condemned as the vile possessor of devils; occasionally, undeserved and doubtless undesired honors were accorded him, more often he was neglected, and still more frequently he was cruelly abused and even tortured. Whether treated kindly or cruelly he was always misunderstood and never was it considered that he might be *sick* either in body or mind. From such unfavorable beginnings and with such a checkered history as a background, psychiatry had to take enormous strides before it could emerge as a science and claim recognition as a specialty of medicine. The strides have been taken, but it is still necessary to dispel some of the shadows cast by ignorance.

A portion of the failure to understand properly the true principles and aims of psychiatry may be traced to more recent times. Why should the physician be less concerned and more at sea about the mind of his patient than he is about his heart, lungs, eyes, ears, nose, throat, or the potential surgery of his abdomen? It is sometimes asserted that the symptoms of mental disease are so disagreeable and disquieting that special hospitals must be provided and that it is therefore difficult for physicians to retain their interest. Along the same line, there is the complaint that methods of treatment must be so individualized that they have no application in other fields of medicine. Other objections are that in psychiatry etiology is largely unknown; consequently, specific therapy is impossible and treatment must be purely symptomatic. Again, the legal aspects are said to be time-consuming and perilous. Finally, the impression has gone abroad that in psychiatry results are universally disappointing and that the laborer is not repaid for his efforts.

At best these objections are half-truths whose better half is not true. A moderate amount of reflection and explanation will dispose of most of them. For instance, other diseases, such as venereal affections, tuberculosis, and cancer, likewise have an unpleasant symptomatology, yet the profession continues to be vitally interested in them. Furthermore, the scientific trend is in the direction of particularized hospitals and they are commonly utilized for the study and treatment of phthisis, contagious diseases and malignancy. The question of therapy in psychiatry will be developed later, and it will be shown that far from being restricted to insanity it has a wide range of usefulness. Progress in etiology has not been insignificant. Knowledge of causation and pathology and sometimes both is as definite in paresis, the alcoholic and drug insanities, certain occupational and industrial psychoses, senile and arteriosclerotic dementias, fever deliria, some of the endocrine dyscrasias, etc., as it is in nephritis or organic heart disease. In addition, we are now somewhat nearer to a measurement of the results of somatic and psychogenic stress and strain. To continue, it is scarcely necessary to recall to an intelligent audience that the absolute specifics available to the internist are extremely few in number and that therapy is still largely confined to the intelligent correction of symptoms plus the healing effect of time. The fear of legal entanglements is to some extent a scarecrow. The percentage of cases which may give rise to trouble in this respect is relatively small and may be readily recognized and avoided and in the long run one is as apt to be sued for his management of diphtheria or a Colles' fracture as he is for a certificate of insanity. Finally, the issue of prognosis has been misrepresented. Between 60 and 75% of the psychoses which are comparable to what the internist would designate "acute" are recoverable, and one need not travel far to uncover in internal medicine large groups, such as certain types of cardiac, vascular and renal disease, or tuberculosis and carcinoma, which are both quantitatively and qualitatively comparable to the chronic residuum of psychiatry.

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*Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 2, 1923.

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THE PSYCHIC FACTOR IN SOMATIC DISEASE

A little reflection should make it clear that even if internists and psychiatrists desired to go their separate ways (which fortunately they do not) conditions would still make it impossible for them to do so. A great number of diseases which begin as strictly problems of internal medicine soon overflow into the channels of psychiatry. To mention but a few, one thinks immediately of the deliria of typhoid, pneumonia and other infectious diseases, the mental states associated with lead and the metallic poisons, the various mental accompaniments and sequels of alcoholism and syphilis, the effect of well-known endocrine dyscrasias on the functions of the mind. How often the interposition of mental symptoms complicates the course of the diseases which make up the bulk of the internist's practice. The coma of nephritis and diabetes has a definite psychiatric aspect inseparable from and indeed a part of the organic pathology; at times in cardiac disease and tuberculosis there are mental pictures which come into the foreground with such distinctness that the physical signs temporarily dwindle into insignificance. Is the internist to say to the psychiatrist "This far may you go, but not farther," and vice versa? The great problems of internal medicine have such a large psychiatric factor and the important questions of psychiatry such emphatic somatic features that anything but the closest coöperation is scientifically out of the question.

There is a psychic element in somatic disease which is difficult to name and describe, but which is even more important than more easily explained mental syndromes. I refer to that imponderable quantity which the internist constantly encounters in hospital, clinic, home and private consulting room. It represents the patient's individual mental response to his illness and is present in some degree even though the illness be nothing but a cold in the head or a mild bronchitis. This "X" quantity cannot be seen, measured, or weighed; it cannot be felt by palpation, mapped out by percussion, heard by auscultation, nor reduced in the test tube, nor brought to light under the microscope. It does not represent the reaction of any one organ or any set of organs, but is the reaction of the whole organism or, in other words, of the person to his sickness. The foremost clinicians have always had the faculty of dealing successfully with this phenomenon. It is said of them that their mere presence in the sick room is sufficient to make the patient feel better. This is not because they have any occult or mysterious influence, but simply because in their greater wisdom they have recognized that there is *something,* call it morale if you choose, which deserves study along with the fever, pulse rate, and blood pressure. This *something* is within the province of psychiatry, indeed, *it is psychiatry* in its broadest sense. Probably it furnishes the chief reason why internal medicine and psychiatry can never be divorced and must always tend toward a more intimate union.

THE SOMATIC FACTOR IN MENTAL DISEASE

That there is a frequent and readily recognized somatic factor in mental disease is clearly established. Conceptions which leave the body wholly out of consideration fail to take into account the elementary facts to be adduced from experimental physiology. As is well known, even the momentary existence of an emotion in a perfectly normal individual is attended by temporary, but complex somatic alterations. The idea of a "mind" floating about in space like a disembodied spirit, independent of physical connection and association and incapable of influencing or being influenced by the soma is, of course, untenable and in fact ridiculous.

In the official manual for the classification of mental disease there are 22 major divisions or headings. The very nomenclature makes clear at once that no less than 11, or 50%, are obviously dependent on organic pathology. In many of the others there are a great number of physical signs and symptoms. Even in the so-called "functional" psychoses they are not wanting. Truly, psychiatry is an inviting field for the internist.

Rather than recount in a stereotyped fashion the list of mental diseases which have a physical basis or a symptomatology in which the organic element predominates, I have followed the plan of tabulating the physical signs and symptoms in the ordinary run of admissions to a mental hospital. It would have been a simple matter to select cases in which the somatic aspects were overwhelming. This would be true for instance in the group of psychoses with somatic disease or in the luetic insanities, but the figures presented are from 100 consecutive and unselected cases. This gives them their only value, which is perhaps somewhat enhanced by the fact that almost 70% of them belong to the "functional" class. They do not represent any special effort at examination and no deficiencies of examination noted in reviewing the records have been supplied. The tables are practically self-explanatory.

NUMBER OF CASES 100 (CONSECUTIVE ADMISSIONS)

DIAGNOSES

Dementia præcox	27
Manic-depressive	23
Involution melancholia	8
Psychosis with somatic disease	8
Paranoid condition	7
Senile dementia	6
Psychoneurosis	5
Psychosis with cerebral arteriosclerosis	4
Psychosis with mental deficiency	4
Psychosis with psychopathic personality	2
Paresis	2
Alcoholic psychosis	2
Psychosis with nervous disease	1
Undiagnosed	1

RESULT

Recovered	28
Much improved	13
Improved	24
Unimproved,	26
Died	9
Number of cases with physical signs or symptoms	99
Number of cases without physical signs or symptoms	1
Total number of symptoms and signs	748

LABORATORY FINDINGS

Number of patients		90
Number of positive findings		227
Leukocytosis	42	
Hemoglobin anemia	35	
Lymphocytosis	27	
Eosinophilia	25	
Red blood cell anemia	6	
Wassermann positive (blood)	3	
Wassermann positive (spinal fluid)	2	
Spinal fluid cell increase with pathological gold curve	1	

URINE

Albumin	60
Casts	25
Pus	1

GENERAL

Number of patients		78
Number of abnormal manifestations		153
Fever (less than a week)	36	
Fever (longer than a week)	14	
Loss of weight	21	
Abnormal increase in weight	2	
Insomnia	20	
Somnolence	1	
Irregular menses	12	
Headache	11	
Anorexia	9	
Dizziness	2	
Fainting attacks	1	
Menopause	11	
Influenza	8	
Typhoid fever	1	
Rheumatism	1	
Arthritis,	1	
Psoriasis	1	
Broken arm	1	

GYNECOLOGICAL AND GENITO-URINARY

Number of patients		54
Number of abnormal manifestations		99
Malposed uterus	29	
Lacerations	28	
Ovarian tenderness	10	
Pathological discharge	8	
Rectocele	7	
Incontinence of urine	3	
Puerperal infection	3	
Cystocele	2	
Ovarian and tubal infection	2	
Chronic interstitial nephritis	2	
Adherent ovary,	2	
Fibroid tumor (uterus)	1	
Pyelitis	1	
Fracture coccyx	1	

HEART AND CIRCULATORY

Number of patients		45
Number of abnormal manifestations		69
High blood pressure	20	
Low blood pressure	19	
Arteriosclerosis	7	
Cardiac irregularity	4	
Organic murmurs	4	
Accentuated valvular sounds	3	
Cardiac hypertrophy	2	
Auricular fibrillation	2	
Extra systole	2	
Acute myocarditis	1	
Mitral stenosis	1	
Myocardial degeneration	1	
Tachycardia	1	
Cerebral thrombosis	1	
Cerebral hemorrhage	1	

NEUROLOGICAL

Number of patients		30
Number of abnormal manifestations		47
Diminished tendon reflexes	12	
Romberg	6	
Twitching and tremors	5	
Stiff pupils	5	
Nerve tenderness	5	
Exaggerated tendon reflexes	4	
Ptosis of eyelid	2	
Unequal pupils	2	
Cerebral hemorrhage (residuals)	2	
Dysmetria	2	
Meningitic signs	1	
Flaccidity of one side of face	1	

MOUTH AND TEETH

Number of patients		28
Number of abnormal manifestations		38
Gingivitis	17	
Apical abscesses	8	

Pyorrhea	8
Necrosis of bone	5

GASTRO-INTESTINAL

Number of patients		27
Number of abnormal manifestations		55
Constipation	21	
Hemorrhoids	14	
Abdominal tenderness	7	
Vomiting	5	
Gastroptosis	2	
Marked separation rectus muscles	2	
Tumor of liver	1	
Marked colonic dilation and stasis	1	
Enlarged gall-bladder	1	
Hernia	1	

EYE, EAR, NOSE AND THROAT

Number of patients		20
Number of abnormal manifestations		26

Eye

Exophthalmos	4
Strabismus	3
Cataract	3
Nystagmus	2
Optic atrophy	1

Ear

Deafness	4
Chronic otitis media	1
Purulent otitis media	1

Nose and Throat

Tonsillar abscess	2
Peritonsillar abscess	1
Infected tonsils	1
Sinusitis	1
Cellulitis	1
Laryngitis	1

ENDOCRINE

Number of patients		19
Number of abnormal manifestations		23
Enlarged thyroid	11	
Metabolism increased	5	
Metabolism decreased	4	
Toxic goiter	2	
Small sella with calcification parietal cortex	1	

RESPIRATORY

Number of patients		8
Number of abnormal manifestations		11
Râles	5	
Emphysema of lungs	2	
Edema of lungs	1	
Dyspnea	1	
Asthma	1	
Impaired resonance	1	

Only a single patient was without symptoms. One hundred patients had 748 signs or symptoms, an average of almost 7.5 in each case. The high percentage of positive laboratory findings should emphasize the usefulness of at least such routine procedures as urinalysis, blood count and Wassermann. Fever occurred in 40%. The high percentage of cardiac, gynecological, and genito-urinary abnormalities is noteworthy. The necessity of careful dental study is manifest. The gastro-intestinal group would have assumed larger proportions if recent admissions had been chosen for report. Dr. Farr's investigations during the past year have shown striking alterations in the secretory function and digestive power of the stomach in the psychoses.*

What inferences may be drawn from what may be termed the high physical morbidity of the psychoses? Unfortunately with the exception of a few instances (less than 15% in this series) it may not be reduced to obvious cause and effect, at least not with such directness and sequence as exists between the bacillus typhosus and the symptoms of enteric fever or between the plasmodium malariæ and the paroxysms of chill and fever they produce. In psychiatry the association is not often so obvious, but this is all the more reason why internists should become more interested in the study of mental disease. The array of signs and symptoms presented in the tables is not at all unusual and could be duplicated by a similar survey of any 100 consecutive patients with psychoses. Sometimes their significance is clear, sometimes it is obscure, but always there is needed investigation and interpretation from the viewpoint of internal medicine.

WHAT MAY PSYCHIATRY EXPECT FROM INTERNAL MEDICINE?

Assuming that the millennium of perfect understanding of each other's aims and principles and harmonious coöperation between internists and psychiatrists will not be too long delayed, what advantages may be reasonably anticipated, even in our generation? How will psychiatry be benefited? There would unquestionably result a better appreciation of somatopsychic relationships. If the tremendous resources of internal medicine, among which is included the investigative scope of its close allies, i. e. experimental physiology, pathology and bacteriology, were massed and set to work on some of the knotty problems of psychiatry, information of notable scientific and practical value would be accumulated. To recount such problems would expand this paper far beyond its proper limits and one must be content to mention only a few outstanding examples. Why the high incidence of pulmonary tuberculosis in dementia præcox? Why do the phenomena of bodily toxicity appear so commonly in all psychoses? How far is the development of mental disease at the climacteric influenced by pathologic organic involution with the undue accumulation of katabolic products? Why does luetic insanity develop? Why do certain diseases such as influenza or encephalitis have such serious psychotic sequels? What do the endocrine imbalances in the psychoses signify? Psychiatrists are no longer satisfied with such general and often vague conjectures as "coincidence," "neuropathic tendency," "heredity." They know there are underlying reasons, and they want the help of internists to uncover them.

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*"Gastric Secretory Functions in the Psychoses," by Dr. Clifford B. Farr and Dr. Charles W. Lueders. Read before the American Gastro-Enterological Association, Atlantic City, N. J., April 31, 1923, and before the Philadelphia Psychiatric Society, May 11, 1923.

From exact knowledge, at first isolated and then coördinated, comes scientific theorizing and deduction, and finally, the establishment of etiological factors. The dependence of paresis on syphilis was suspected for many years, but it was only after the problem was intensively attacked clinically that the theory attracted enough attention to stimulate the brilliant research which had its culmination in the demonstration of the spirochete in brain tissue. So in spite of the artificial separation of psychoses into organic and "functional" it is not beyond reason to say that the answer to some of the latter may be eventually revealed in the test tube or under the microscope *after sufficient internal medical and psychiatric correlation has been secured.*

The therapeutic armamentarium of internal medicine would be utilized to its fullest extent. Even now advances in pharmacology and in the specialized forms of therapy *sine* drugs should be used more generally in rational experimental endeavors in psychiatry. The bulk of such work must come from the internist. Only his experience can interpret some of the perplexing somatic signs and suggest appropriate therapeusis in the psychoses. The psychiatrist may be able to point out modification of symptoms, probably traceable to the psyche of the patient, but it is a lamentable error for either psychiatrist or internist to assume that mental disease in itself always falsifies the ordinary landmarks of internal medicine. Such an assumption can only lead to therapeutic nihilism which is as harmful for psychiatry as it is for internal medicine.

Last but far from least in this age of prevention and prophylaxis, the stimulus of internal medicine if properly applied will "put," in the language of the day, the "physical" into mental hygiene. Mental hygiene as a term is not objectionable, but it has never been universally popular, possibly because it seems to imply a detachment from the practical aims of public health. It goes without saying that the two are inseparable. Indeed, internist and psychiatrist if they joined hands in the furtherance of hygiene might travel together for many years before it became necessary or even desirable to part company. From the vantage point of the conditions they encounter in daily practice, at least, they should be mutually interested in preventive measures directed at lues, alcohol and habit-forming drugs, in the proper safe-guarding against metallic and other poisons in the industries, in the reduction of factors favoring blood-vessel sclerosis, in the accurate measurement of fatigue, in the relief of poverty and its attendant evils, etc. To illustrate concretely, who can say, for instance, whether lues once contracted will lead to paresis or aortic disease? Alcohol to delirium tremens, dementia or cirrhosis of the liver? Arteriosclerosis to chronic kidney disease, apoplexy, or arteriosclerotic dementia? Certainly at the stage where prophylaxis is feasible, no differentiation between public health and mental hygiene is possible.

WHAT MAY INTERNAL MEDICINE EXPECT FROM PSYCHIATRY?

Conversely psychiatry has a very definite contribution to make to internal medicine. Even if this should not go beyond the recognition and emphasis of that elusive but highly important factor, the psychic element in somatic disease, how valuable a contribution it would be! I do not believe it is an overstatement to say that fully 50% of the problems of the acute stages of an illness and 75% of the difficulties of convalescence have their primary origin not in the body, but in the mind of the patient. Psychiatry has methods to impart which will make it possible and feasible to recognize and handle this factor. This is the age of efficiency. The maximum of effort must be directed against the point of greatest resistance and waste must be reduced to a minimum. On every side there is the cry for greater medical and surgical efficiency—elimination of fruitless motion, reduction of the number of hospital days, shortening of convalescence within the limits of safety, and economic utilization of the partially disabled. A tremendous gain in every direction will be sure to result if internists will appreciate the psychopathology of the patient and his illness and treat it as energetically as they do his dangerously high fever or his circulatory collapse.

For the sake of convenience anatomy studies the body as separate organs and systems; academic physiology, as the individual functioning of those organs and systems. At the bedside and at the postmortem table such limited conceptions are swept aside, and we are made aware of the enormously complicated and connected relationships in anatomic structure and physiological dependence. Likewise, it is customary to think of disease in terms of the various hypothetical levels affected, such as, for instance, the structure level, the chemical level, the psychic level. Such distinctions are largely artificial, and in disease we are almost always dealing with total reactions which are the end result of the constant interplay between individual and environment. Herein is the nucleus of the broad etiological considerations which psychiatry studies and which are equally applicable in the field of internal medicine. In reality there is no such thing as absolute, unconditioned specificity. If contact with or exposure to the bacillus tuberculosis inevitably meant the development of consumption in an individual, if the mere presence of the pneumococcus, spirochæta pallida, or the bacillus of typhoid fever must always have as a necessary outcome pneumonia, lues or enteric fever, then the human race would long since have disappeared from the earth. In all probability the processes that lead to the development of any morbid condition are immensely complicated and closely related to one another, and disease is almost always the culmination of a long series of more or less detrimental or destructive conditions which eventually become sufficiently strong to break down the barriers of natural and acquired resistance. Such destructive conditions may be physical or psychogenic, rarely ever occurring in pure culture, but the one intermingled with or closely following the other. Thus a period of pronounced mental strain may disorganize the endocrine apparatus with resultant exophthalmic goiter which in time may give rise to mental symptoms. Likewise, years of constant mental stress may lower the resistance to the point of pathological fatigue which may eventuate either in acquired neurasthenia or in actual organic pathology. Likewise, in the disease itself the infecting agent or the toxin may expend itself chiefly on the gross structural organism or it may express itself by mental complication and sequels. Epidemic encephalitis furnishes a typical example. The patient may be left with a permanent Parkinsonian syndrome, but clear mentally, or he may be neurologically intact, but present behaviour abnormality practically amounting to criminalism. Enteric fever may run a smooth course without complications, but again hemorrhage or peritonitis may occur or it may be essentially a psychosis with grave delirium and possibly meningitic signs. Why these differences? In other words, while we know that in any disease the severity of the infection is influential, we must know also that there are other influences. In the last analysis is it not feasible to weigh in the balance the whole life history of the patient and even to take into consideration remote, perhaps, ancestrally determined strengths or weaknesses of the various systems of the body such as the circulatory or nervous? This is the philosophic conception of etiology which psychiatry particularly emphasizes.

It is unfortunate that there is not more real understanding concerning the treatment methods of psychiatry. They are thought to be either mysterious and almost occult or else it is assumed that actual treatment does not exist and the patient gets well or worse without let or hindrance from the physician. Both notions are wrong. A portion of the treatment which psychiatrists employ may be classed as psychotherapy. This may be roughly defined as getting at the psychopathology of the patient and his illness and correcting it as far as is possible. This does not imply the use of any psychic sleight of hand, of any tricks, or of any complex formulæ and practices. Psychotherapy is utilized more or less unconsciously, sometimes awkwardly and sometimes skillfully by internists, surgeons, and by practitioners in every specialty of medicine. Psychiatrists are merely attempting to reduce it to feasible and practical limits, and realizing its value as a therapeutic weapon, they strive for deliberate carefully aimed effect instead of trusting to accidental and often ineffectual thrusts. Here is a page from psychiatry which is well worth the taking.

The remainder of our therapy is largely symptomatic and as such is comparable with the bulk of the treatment which the internist carries out to such good purposes. However, in psychiatry, too, from the necessity of an intensive attack on certain critical situations has been evolved improved forms and technique of active treatment. Some of these forms and some of this technique may be carried over directly into internal medicine with considerable benefit. No criticism is intended by the statement that the febrile and toxic deliria do better in a mental than in a general hospital. In the latter there is still a tendency to be somewhat disconcerted by the motor and vocal activity of the patient and to prescribe restraint and narcotic drugs; in the former the emphasis is on free elimination, fluid intake, and sleep procured by agents other than opiates. Certain developments of hydrotherapy, particularly the continuous bath would have a wide range of effectiveness in the general hospital and even in the private home. Neurologists and psychiatrists were the first to insist on the potency of rest in bed, isolation, overfeeding, massage and electricity. It is still necessary to teach that they must be given, not haphazardly, but as exactly and carefully as is a hypodermatic injection of morphin. Occupational therapy, not as a pastime but as a successful means of hastening recovery and establishing readjustment, is now receiving flattering recognition from internists. One might continue for many pages. However, it should be clear that instead of being inanimate, the therapy of mental disease is alive with actual help and potential suggestion which, with but little modification, will increase the resources of internal medicine.

It seems almost superfluous to say that mental hygiene should have a recognized place in physical hygiene or public health. As has been stated, the two are inseparable, part and parcel of each other; inseparable in method of study, for somatic and psychogenic causative factors and phenomena of disease are often too closely interwoven to permit of separation; inseparable in aim and principle, for what would be gained by securing physical perfection if the race were not to progress intellectually and morally? You are familiar with the belief of certain historians that the decline of powerful Rome was not due primarily to influx of luxury, but to the spread of malarial fever. In our own day we have witnessed a moral and mental degradation in certain communities of the South resulting from infestation by hookworm. Disease always lowers efficiency—efficiency of the patient, efficiency of those who are in immediate contact with him, finally efficiency of the entire community. The somatic handicap is obvious and immediate; the mental, economic, and social liabilities are insidious, remote, but more damaging. No campaign for public health can afford to disregard them; but to study and control them, the aid of mental hygiene must be enlisted.

CONCLUSION

If there is a moral to be gathered from the reading of this paper, it is that internal medicine and psychiatry are mutually dependent and should be closely and constantly allied. I should like to point the moral with the words of a well-known American internist: "Psychiatry, like each of the other branches of medicine, has come to be recognized as one of the subdivisions of the great branch of biology, free to make use of the scientific method, duty bound to diffuse the knowledge that it gains, and privileged to contribute abundantly to the lessening of human suffering and the enhancement of human joys. General practitioners of medicine and medical specialists, at least the more enlightened of them, welcome the developing science of psychiatry, are eager to hasten its progress, and will gladly share in applying its discoveries to the early diagnosis, the cure, and the prevention of disease."

4401 Market Street.

DISCUSSION

Dr. Theodore Diller (Pittsburgh, Pa.): I wish Dr. Strecker would be encouraged to come before this Section again next October with another hundred cases, and this time let his hundred cases be selected in this way: let the gate man at the Pennsylvania Hospital stop every man and woman who goes by, presumably ordinary people going by in their ordinary duties, and take them up to the hospital and let the doctor examine them for somatic signs—just one hundred ordinary people going about their ordinary duties. How many times would something be found wrong with the urine, or the heart, or the arteries? Here are ninety cases reported with positive findings, albumin, casts and so on. In ninety supposedly well persons how many ailments could be found? I would make a guess of sixty, at least. In the other symptoms, loss of weight, aneurysms, and so on, you would find those things a number of times in these one hundred captured persons. In the gynecological changes I think you would find that at least half of the women are not well, in the circulation groups you would find a good many, and when you come to the neurologic signs you would find slow knee jerks, slow pupils and so on in a number of people who did not know there was anything wrong with them, and so on and so on.

Far be it from me to hold this paper up to ridicule or to speak lightly of it; heaven forbid! I have been too careless in the past. This is zeal; but there is danger in over-zeal. You must not be led astray by the zeal of Dr. Strecker; he is full of it. He is a scientific man from the toes up and we must make a very considerable allowance or we will be led astray. There are many signs that were shown in his charts that have nothing to do with the symptoms. Even in the cases of syphilis you find a man you did not suppose had syphilis who has mental symptoms and you find the Wassermann reaction + + + +, but it is poor logic to jump to the conclusion that the symptoms from which he suffers are necessarily due to syphilis. They may be due to something else. We must have explanation, we must have logic.

The point I wish to make is that we must remember that there are many things which may exist which may not be responsible for the symptoms. Illustrating one thing which is so well known, in the cases of lacerated cervix when men with poor logic in York, Williamsport and so on see them they are apt to jump to the conclusion that this was the cause of the mental symptoms. It all needs investigation and logic and let us have as much of both as possible.

Dr. Earl D. Bond (Philadelphia, Pa.): It is a little hard for me to understand how anyone can be led astray by getting this physical foundation for a study of patients suffering from mental disease. The thing that brings these patients to the psychiatrist is shown in this illustration, which goes back to the remarks of the chairman at the opening of the session. A patient came in from a Germantown physician who was interested in the aspects of internal medicine. She was depressed and irritable. Because of this her physician did not find it necessary to make a full physical examination but sent her to a mental hospital for treatment and the minute she got there our attention was focused on the physical trouble. We found her suffering from trouble with the pancreas and the teeth, and when these conditions were cleared up there was no depression and no irritability left. That is an unusual case but it does not do us any harm to know what physical troubles underlie our mental diseases. There may be no connection between them but there is, I think, no chance to be led astray.

Dr. A. C. Buckley (Philadelphia, Pa.): The only excuse I have for entering this discussion is to point out that Dr. Strecker has struck the keynote of the present situation in regard to the present point of view of the psychiatrist. The finding of these physical signs makes us better psychiatrists because we become better internists. I have in mind now a patient who came to us in a state of profound depression and with slow knee jerks. The patient has had definite laboratory findings of syphilis, yet I am not at all sure that the patient is a paretic. I am reasonably sure that he is not. The more we study a patient from the physical aspect, the more will we find to treat and the better fitted will we be to treat that patient and get a better adjustment.

Dr. David Riesman (Philadelphia, Pa.): During my internship at one of our Philadelphia hospitals a number of years ago, the psychiatrists were not in the habit of making physical examinations. They were interested only in the psychiatric condition of the patients. I well remember the tremendous sensation created in the medical world by Dr. S. Weir Mitchell, who accused the psychiatrists of shutting themselves up behind high walls and making no progress. The paper presented by Dr. Strecker shows that they are no longer locked behind strong stone walls, but have established an intimate contact with the other branches of the medical profession.

It is necessary to keep in mind in the study of abnormal psychic states the part played by toxemia in the production of such states. An ordinary acute delirium is usually the result of intoxication of some sort. The same toxic causes may play a part in mild chronic states of mental aberration. Some types of heart disease are associated with mania or melancholia or with delusional states, which disport themselves so prominently at times as to cause the underlying condition to be overlooked. In such a contingency the case will be considered one of pure insanity when in reality the mental condition is merely a symptom of advanced cardiac disease or perhaps at times of digitalis intoxication. I remember at this moment a patient with a violent mania in the Philadelphia General Hospital in whom we found an acute fibrinous pericarditis as the probable etiologic factor.

In grave anemia, particularly in pernicious anemia, various forms of mental disturbance may occur that have all the appearances of true psychoses, but are dependent upon the anemia. The power possessed by uremia of causing mental disturbances that have every earmark of real psychoses is well known to all physicians practicing in large hospitals. In lethargic encephalitis we may also meet with psychoses that by the alienist of former days would have been considered independent psychiatric states, but which are symptomatic and dependent upon physical conditions.

The lesson to be drawn is that the alienist must have clinical knowledge and that the practical physician must bear in mind that insanity is not always a purely mental condition but a symptom of abnormalities in structure or in the chemistry of the body.

Dr. Edward J. G. Beardsley (Philadelphia, Pa.): Dr. Strecker has given us an admirable presentation of certain viewpoints of modern psychiatry. He has made it clear to us that the patient with a mental disorder should be as carefully studied as if he were ill with any other ailment.

Regarding the trend that the discussion upon Dr. Strecker's excellent paper has taken, one can but feel that the citizens of Pennsylvania who are so unfortunate as to suffer from mental disorders, or whose relatives, friends or neighbors so suffer, are indeed fortunate to have scientists whose ideas correspond with those of Dr. Strecker and Dr. Bond to care for them. The modern psychiatrist is a well trained physician whose particular interest lies in the disorders of the mind.

Dr. Strecker (in closing): I wish to apologize for leading Dr. Diller astray. However, I think it could have been avoided by one of us, and I am not at all convinced that this is not the right way to approach the problems of psychiatry. In fact, I am more convinced than ever. I do not mean that I am not impressed with the importance of heredity, as I know Dr. Diller is, but I do not wish ever to become so impressed that I will be blinded to this other point of view. Instead of asking the gateman to stop one hundred casual passersby and inquire as to their physical status, I might suggest that the gateman might stop the same hundred supposedly "normal" individuals and inquire as to their heredity. When the results are in, I do not believe that there would be any particular choice.

It is obvious that I have not claimed any etiological relationship between the physical morbidity and mental disease. This is simply a method of investigation, a feasible plan of study. It is one way of obtaining knowledge and information. Would we have ever arrived at the diagnosis of paresis if physicians had not observed patients and collected their symptoms and signs into the symptom complex which is now known as paresis? It is true that the laboratory confirmed their beliefs, but it is likewise true that the clinical entity was well understood long before laboratory investigation definitely settled the problem. My contention is that it is necessary and imperative to examine every mental case carefully, for physical as well as mental signs, and it is just because we lack knowledge that these examinations should be even more searching than in better understood conditions such as typhoid, pneumonia, and the like. I repeat that I cannot apologize for having stated that patients who have mental disease should be most exhaustively studied from the physical as well as from the psychological standpoint, and I think that in this way progress will be made.

THE IMPORTANCE OF AN EXPERT DIAGNOSIS IN ACUTE RHEUMATIC FEVER*

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My purpose in dealing with this topic is not to present it from the clinical standpoint. In a disease so ubiquitous and well-known, clinically at least, even though the etiology remains somewhat obscure, for the streptococcal origin is not universally accepted, such a malady certainly needs no descriptive presentation at this late date. Nor am I unmindful of Johnson's statement in Boswell's "Journal of a Tour of the Hebrides." In speaking of a contemporary, Warburton, a victim of cacoëthes scribendi, Johnson said, "Warburton has accustomed himself to write letters just as he speaks, without thinking any more of what he throws out," further adding, "The worst way of being intimate is by scribbling."

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* Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 4, 1923.

Despite this, I feel justified in urging briefly a plea for more exact diagnosis, granting at the same time that this disease owes its acceptance as a specific malady chiefly to clinical evidence. Whether the splendidly prepared and scientifically educated medical student of to-day will develop a balanced judgment, powers of ratiocination and at all times a strict regard for the truth, time alone can tell. He may become a transcendentalist, and with his head in the clouds, more signally fail than has his more humble and less scholarly predecessor.

It should not be forgotten that part of the doctor's function is to serve as an educator, an interpretative educator. No matter how far he may fail as an individual, collectively he occupies a place of high esteem in any community, and it is not alone his privilege, but his duty to serve his clientele in the broadest sense, the least of which probably, should be the giving of drugs.

Had this responsibility always been uppermost in his mind, the doctor never would have led his lay people into the state of mental confusion which exists to-day relative to the term rheumatism, a word said to have been first employed by Ballonius in a treatise on "Rheumatism and the Pleurisies" in 1642, but which has insensibly come to be applied to the most diverse kinds of pains. Were this a simple misuse of terms it would not be of vital import, but unfortunately it conceals the real danger of the situation. This looseness in diagnosis would not be a matter of any particular concern were it not for the fact that true rheumatic fever is as much a disease of the heart as it is of the joints. As one writer puts it, "Endocarditis, pericarditis, and in less degree, myocarditis, can hardly be considered complications of acute rheumatism; they are just as much part of the disease as the affection of the joints." This is certainly the case in children, though not quite so strictly true of those suffering an initial attack later in life. A medley of pathological conditions exists, having little or nothing in common except the presence of pain in a muscle or in or around a joint. These, however, never present involvement of the heart as a necessary part of the picture, nor are they complicated or followed by heart disease. These conditions being so common, yet without danger to life, though in some instances accompanied by more or less deformity, do not impress the layman in a serious sense. Therefore, when such a diagnosis is so loosely and carelessly made, it engenders an attitude of relative indifference. Thus we have an exemplification of the Æsop fable of the boy and the wolf. When the diagnosis of rheumatic fever is deservedly made, the patient and the family are not prepared for it, and accept with poor grace the injunction that prolonged rest is necessary, for their familiarity with the diagnosis of rheumatism has bred contempt. As a matter of fact, joint symptoms in true rheumatic fever, especially in children, are so often insignificant and fugacious, that they may escape notice altogether. It would not seem ill-advised therefore, especially in an educational sense, to drop the designation articular, and to speak of the condition as rheumatic fever or acute rheumatic fever.

Many years ago Sturgis and Coupland called attention to so-called "growing pains" in children as a manifestation of rheumatic fever, such cases having a high incidence of cardiac disease, resulting in malnutrition and often in stunted growth. Whether chronic rheumatism really exists as a particular entity in any way related to the acute variety, is highly problematic. Acute rheumatic fever as we see it typically in children and young adults, does not deform the joints, whatever it may do to the heart. Arthritis occurring in later life is more or less deforming, but it is not associated with cardiac disease, nor with the other features which go to make up the clinical picture of acute rheumatic fever as seen in those of younger growth. Why, then, do we ever use the term rheumatic for this older group, thereby serving to perpetuate the confusion already existing in the lay mind, a confusion we have invited by our loose nosology? By so doing we increase our own difficulties in the proper management of true rheumatic fever, perhaps at the same time condemning a patient to a life of invalidism.

Fortunately, in some measure at least, this topic is receiving increasing recognition at the hands of our public health workers. In Philadelphia, and doubtless in many other municipalities, the school physicians are being especially trained in cardiac diagnosis and all that that implies. This knowledge must in time filter through the children to their parents. No one can at this time estimate the importance of this phase of public health work, but at least a vista of its value may be glimpsed. Unfortunately, however, these are the late cases. More or less serious and irreparable damage already has been sustained. We should awaken to the fact that our own loose methods are responsible for much of this. Were we to educate the public as our function permits and our duty demands, we would be able to obtain that coöperation, without which, vast numbers become hopeless invalids or are condemned to early death.

Only in the formative stage of an endocarditis can really efficient aid be rendered. Prolonged rest, sometimes for months, is the chief essential at a stage when the entire heart is more or less softened and diseased. Very naturally, if the provocative infection can be successfully combated, the time element is reduced, but in most instances this is not accomplished, and in many cases in fact, largely because of our faulty approach I fear, the true nature of the condition is not discovered, not even suspected, and only at a later date is the destructive result made manifest.

I recall a child seen some years ago who had an attack of tonsillitis lasting one day, fleeting joint pains on the second day, and a mitral regurgitant murmur developed on the fourth day. With no further manifestation of rheumatic fever, an obstructive mitral element became superposed and his illness became critical. At one time his respiratory rate was 108 and his heart rate could not be counted. He was kept in bed over 6 months and was only permitted very gradually graded exercise during the balance of the year. He was then 6 years old, and now at 31 years of age, his heart is not enlarged, is perfectly competent and without the semblance of a murmur. This boy was seen with me at various times by Drs. Daniel Longaker, Crozer Griffith and David Riesman. It is the early recognition, the forceful handling, not alone of the patient, but of his immediate family and often the well meaning but misguided friends, in addition to prolonged rest, which ever makes such a result possible. I do not wish to imply that such a beneficent termination is always possible, but I do insist on the absolute necessity for a careful study of the heart and for rest in bed for every case of tonsillitis, no matter how slight it may be, for every child who develops pallor and disinclination for effort, irrespective of the apparent cause, for every child with so-called "growing pains," and (need it be reiterated?) greater care in the selection of terms.

From the known fact that the diagnosis of rheumatic fever is so inexact, it is impossible to draw any conclusions of a definitive character from any statistics extant. It is probable, however, that at least two hundred thousand (200,000) cases occur each year in the United States, and a large proportion of these remain more or less crippled, and permanently crippled because of the damaged heart. The importance of this subject and its potential seriousness must therefore be admitted.

That much may be done in the way of minimizing this evil is true not alone in a preventive sense, but also in those who are already victims of the malady, at a stage early enough to make prolonged rest and other means of treatment of practical value. Organogenetic repair is not met with in the human as we see it in some of the lower animal forms, but children certainly possess a large measure of histogenetic recovery. That this must be the case is evident to those who have seen recovery occur even in marked instances of endocarditis in children who have been given the benefit of an early diagnosis and prolonged rest.

Mortality records of rheumatic fever are no index of its morbidity nor of the amount of suffering or permanent ill health which follow in its wake. Doubtless a large proportion of the deaths reported as due to endocarditis and some also under the caption of pericarditis, are due to antecedent rheumatic fever. Due recognition of these facts will help us better to realize our responsibility in this matter.

327 South 17th St.

DISCUSSION

Dr. Judson Daland (Philadelphia, Pa.): It seems to me that perhaps the most important thing to dwell upon is the question of name. In the early days of medicine when no knowledge of the cause of rheumatism existed it was thought to be a rheum and hence the name rheumatism. The word "rheumatism" should be abandoned and a name invented indicating etiology, as for example, polyarthritis septica for acute articular rheumatism. When the word rheumatism is employed we should prefix the words "so-called."

Dr. Robertson has pointed out to us the very marked likeness and relationship of so-called rheumatism to endocarditis. We have all had the same experience. The treatment of so-called rheumatism has been revolutionized by the knowledge that it is usually secondary to a focus of infection. No longer do we consider alkalies and salicylates as specifics but rather as palliatives. We no longer look upon so-called rheumatism as meaning six weeks in bed, and that subsequent attacks are to be expected, but now know that the complete removal of all foci of infection is followed by the rapid and permanent disappearance of all symptoms.

Dr. Lawrence Litchfield (Pittsburgh, Pa.): A survey recently made is so apropos of Dr. Robertson's very timely paper that I wish to remind you of it. You have probably all read it. The survey was undertaken in New York to study the familial aspect of the septic arthritides, comparing their incidence with the familial incidence of tuberculosis, about which, of course, there can be no doubt as to its being the most prominent house infection. After investigating a series of many hundred cases in New York City it was found that there was just about the same evidence of infection, a familial infection, in the chronic cardiac, so-called rheumatic, cases that there is in tuberculosis.

Dr. J. Slater Crawford (Pittsburgh, Pa.): I feel that the subject Dr. Robertson has brought before us is probably the most practical one we have heard at this meeting. While we have had extremely interesting papers and extremely practical ones, this is a subject which brings up probably the most common and most urgent question in general medicine to-day. Of course, I have always felt that we should look upon rheumatism more or less as a general streptococcicosis with which you are all familiar. The infection occurs usually from a tonsillitis and we do not know where it will strike. It may strike the joints, the cortex of the brain, the kidneys, or it may strike the heart. It is perfectly true that that complex which we call "acute articular rheumatism" generally has a predilection for the heart, but we may also have various joint infections which may be swollen one day and very painful, and the next day this may shift to other parts, but the streptococcicosis, if I may call it so, is just as prominent in the joints or the kidneys.

As far as names are concerned, I do not see why we might not just as well stick to the old name because we are getting to understand it. It is not easy to change names. Dr. Daland's name is a very good one, but what appeals to me more if we are to change the name is to call it a "stereptococcicosis." We have very limited means of making a prognosis in the present decade of streptococcicosis in relation to the heart lesions, as to whether that patient is developing a heart lesion. First we have a rapid heart; next to that we have an accentuation above normal of the second pulmonic sound; we have next to that a murmur and next to that an enlargement. It is several days before these develop, except the "rapid heart" which develops immediately; but I think, further, that streptococcal infection remains in the body for a long time and should be kept in mind, and the patient kept in bed.

Treatment was not mentioned. I am always glad to have treatment mentioned in a paper but it cannot always be done because of lack of time. I think rest in bed is a good thing but I do not think that giving salicylates by mouth is the only treatment for rheumatism or streptococcicosis. I am becoming more and more convinced that we should resort to intravenous treatment in all these cases, giving salicylates intravenously, and I hope we can soon resort to mercury intravenously with some hope of relief.

Dr. E. J. G. Beardsley (Philadelphia, Pa.): One always likes to talk upon subjects that interest him most. Dr. Robertson's scholarly and interesting paper makes one feel, more than ever, what a pity it is that rheumatic fever, with its complications and sequels, is so frequently met with. Can we say that, as a profession which believes in preventive medicine, we do all that we can to prevent this dread disease?

We spend much time in diagnosing the condition, watching for its complications and treating the disease and its sequels. Would it not be more efficient and practical to spend more time and thought in preventing the disorder? We have statistical proof that removing infected teeth and tonsils and treating other foci of infection tends to eliminate attacks of rheumatic fever. Is it not practical to use all our influence to continue the use of and improve these prophylactic measures?

We have been much interested in studying the effect of removal of foci of infection in the midst of an attack of rheumatic fever in cases that were brought to the hospital early in the attack. The thought of operating upon such patients during the course of a rheumatic fever may seem radical and dangerous to many. We consider that the danger of complications due to the operative measures is much less than the danger of allowing the infected teeth and tonsils to remain in the mouth or throat during the illness. We have had a number of patients operated upon both in the early and later stages of rheumatic fever and have had every reason to be gratified by the results obtained. Not only have there been no complications as a result of the operative measures but the course of the illness has been materially altered and shortened.

It seems reasonable to advise that our patients, young, adolescent and middle-aged, keep their throats and mouths free of infection. If such advice is taken we will less frequently encounter nephritic conditions, less frequently be called upon to treat acute rheumatic fever, endocarditis, pericarditis and myocarditis in the patients that have received careful supervision and the modern prophylactic care.

It is my impression that those patients suffering with acute rheumatic fever, even with the presence of complications, whose tonsils and teeth are infected, do best if these infections are removed during the course of the illness rather than to wait until the patient is convalescent.

Dr. Theodore Diller (Pittsburgh, Pa.): I wish to ask Dr. Beardsley if he will go a step further and advise the removal of the tonsils of all the healthy people in advance.

Dr. Beardsley: If Dr. Diller will tell us who is an absolutely healthy person we shall be glad to answer his question. In Philadelphia we are so unfortunate as to be able to find few healthy tonsils in our city dwellers. It is my belief that a diseased tonsil and a decayed tooth (that cannot be properly preserved) have no right in the human throat or mouth.

THE PRESENT STATUS OF THE VESTIBULAR TESTS FROM THE STANDPOINT OF THE OTOLOGIST*

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Neuro-otology being still in its developmental stage, it is hardly possible for anyone to sum up correctly with any semblance of authority, its so-called "present status." One can only speak modestly of his own experiences with these tests, and record, as accurately as he can, whatever data he has gleaned. In a contribution of May, 1922, I discussed the question of the neuro-otologic tests as an aid in diagnosis of tumors of the brain. To-day I will confine myself exclusively to my experiences with the vestibular examination in my routine otologic work.

Perhaps its greatest value to me has been the help derived in cases of atypical mastoiditis. The study of a large number of "brain cases" at various stages of their development has demonstrated that one of the most constant phenomena is an interference with the responses from the vertical semicircular canals but not from the horizontals. It occurred to me then that this same phenomenon might appear in cases of threatened or actual intracranial involvement incident to mastoid disease. With this in mind, cases of mastoiditis, wherever possible, were subjected to a vestibular examination, at least by the caloric method, and the findings were most surprising. Many cases of mastoid disease where the clinical data were not sufficient for definite diagnosis or not clear enough to urge immediate surgical intervention, showed this phenomenon of nonresponsiveness from the vertical semicircular canals. Prompt operation in these cases proved the wisdom of considering this phenomenon as a danger signal. The following will serve as an illustration:

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* Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 4, 1923.

Case I: Mrs. M. H., aged 48, seen first August 13, 1923. Complained of discharge from right ear of two weeks' duration; severe headache, appearing at irregular intervals. Was always subject to attacks of headache but never as severe as in the last two weeks. Marked deafness, and a feeling of fullness on that side of the head. No previous history of ear trouble on either side. Occasional sore throat in childhood. Examination showed fair-sized central perforation in drumhead with watery discharge. No edema or swelling about the canal or behind the ear; no tenderness except on very deep pressure directly over the antrum; temperature normal. The hearing tests showed considerable impairment of hearing in both ears but to a larger extent in the right or affected ear. Patient was observed for several days with practically no change in symptoms except that the headache became much less severe. Blood examination showed 8,000 leukocytes, wth 72% polymorphonuclear cells. The x-ray examination showed the following: "Left mastoid clear; right mastoid irregular, incomplete sclerosis, no cell structure except a few indistinct ones in the superior anterior portion and in the zygomatic region. A small area suggestive of destruction just anterior to the sinus. Lateral sinus superficial and occupies a midanterior position." Question of operation had to be considered seriously but, in view of the negative blood picture, the unsatisfactory results of the x-ray examination, and the absence of edema, swelling or tenderness about the ear, or fever, the indications were not quite clear. The vestibular examination showed nonresponsive vertical canals on the left or good side, with marked active responses from the horizontal canal. Immediate operation was recommended and carried out. A sclerotic mastoid was found with the lateral sinus large, very superficial and lying directly against the canal wall; some pus and necrotic tissue around the tegmen antri, with a bare dura. Patient made an uncomplicated recovery.

Case II: G. K., a girl of 18, a patient at the Mt. Sinai Hospital, gave a history of an acute ear suppuration of four weeks' duration. The drumhead had been incised originally but the discharge continued for a few days only, when the incision closed. It was then reincised but the discharge did not reappear. Patient complained of some slight pain about the ear and fullness on that side of head. Examination showed a cloudy drumhead, no perforation, no bulging. The auditory canal was tender on pressure but not swollen. There was some tenderness over the mastoid but no edema. There was no headache or rise of temperature. Hearing in that ear was good. There was a suggestion of furuncular involvement of the external auditory canal and the case was treated expectantly for a few days. A vestibular examination showed nonfunctioning vertical semicircular canals on both sides, but good, active responses from both horizontal canals. Patient was advised immediate operation. This was done. There was found most extensive necrosis, an uncovered lateral sinus as well as the dura of the middle fossa, the latter covered with granulation tissue. The patient made an uneventful recovery.

Case III: D. D., a man 50 years of age, seen first for acute otitis media. The Shrapnell region appeared bulging and incision was made. This was followed by mucopurulent discharge. Pain continued but was not marked. Several days later, headache appeared; temperature varied between 98 and 99.5. There was slight tenderness over the mastoid but no edema. The upper portion of the drumhead was slightly bulging, but no sagging of the canal wall. A radiologist reported an inflammatory process in the mastoid cells but the outline of the cells well defined. Caloric test showed very active nystagmus, vertigo and past-pointing from horizontal canals but no responses from vertical canals. Operation was advised and carried out. A perisinus abscess was discovered with no evidence of involvement of the sinus itself. Patient made an uneventful recovery.

Case IV: A. W., a boy of 18, gave the following history: Four weeks prior to examination, while in New York, he developed pain in the right ear and was treated in a dispensary in one of the New York hospitals. The nature of the treatment and the diagnosis of the condition at the time were not obtainable. He did not improve and came to his relatives in Philadelphia, who brought him to me. Examination showed a markedly swollen auditory canal, so occluded that even the smallest speculum could not be introduced. There was a copious mucopurulent discharge; extreme tenderness with swelling in the region of the tragus; some edema behind the auricle but no tenderness over mastoid; no headache, no fever. No history of any trouble with that ear prior to the present infection. Practically no hearing remained on that side but good in other ear. Patient was admitted to the hospital for observation. The swelling of the canal was so marked that it suggested strongly a furuncular infection. This was apparently borne out by the tenderness over the soft parts of the ear only, deep pressure over the bone not being painful. However, the marked loss of hearing with the Weber lateralized to the good ear, and mucous element in the discharge indicated something more than a mere furunculosis. A radiologist reported as follows:

"Left mastoid shows no evidence of pneumatic cells. There is a homogeneous appearance throughout but no evidence of bone necrosis. The antral region is quite dense. It also shows no evidence of necrosis. Right mastoid is exactly similar in appearance to the left. There is no definite evidence of bone necrosis. The sinus is well visualized and is normal in all respects."

This was evidently not helpful. A caloric test of the normal or left ear showed good responses from the horizontal canal but no nystagmus, vertigo or past-pointing from the vertical canals. Operation was advised and carried out. The mastoid presented a sclerotic shell but the deeper portions had been destroyed and replaced by a huge cholesteatoma. The dura of the middle fossa was bare but of good appearance. Patient is still in the hospital but on the road to recovery.

These few cases illustrate our general experience with the vestibular tests in acute mastoid infections. True, in some of the cases encountered operation would have been advised, based on the clinical data alone. On the other hand, there were instances where only the vestibular findings decided in favor of operative intervention rather than on a waiting policy of observation.

In chronic ear suppurations, where intracranial involvement is suspected, the vestibular tests are, of course, of the greatest value.

Case V: W. M., male, 40 years of age, referred for examination April 13, 1923. Patient complained of headache for last seven or eight years. Recently slight vertigo. Had a suppuration in his left ear since childhood. Examination showed practically normal-looking right ear with good hearing. Left ear showed a chronic purulent otitic process with drumhead gone, the pus fetid and profuse. Hearing quite good. No spontaneous phenomena referable to the vestibular mechanism. Station good. Pelvic girdle movements good; pointing tests performed accurately. Turning to right and left showed good nystagmus, vertigo and past-pointing. Douching the right ear showed a delayed response from the right vertical semicircular canals. The nystagmus came on very suddenly in an explosive manner. From the horizontal canal—large, active nystagmus. Douching left, or suppurating ear, showed prompt and active response from vertical semicircular canals but markedly perverted nystagmus from horizontal; that is, on tipping the head back the nystagmus, instead of being in a horizontal plane of the head, was vertical and markedly oblique.

We considered the findings indicative of intracranial involvement because the left horizontal canal produced such a markedly perverted nystagmus and the vertical canals of the right or good ear showed a much delayed response, but one that was marked when it finally did appear. There was hardly anything else in the entire examination to point to a central lesion. There was no choked disk, no palsy of any of the cranial nerves, no weakness of any of the muscles, no sensory disturbances, no ataxia or adiadokokinesis, no fever, no mental symptoms. We considered the vestibular phenomena referred to as sufficiently definite to make a diagnosis of central involvement. The suppurating ear naturally pointed to a brain abscess as being the most likely lesion. Good vertigo and past-pointing after turning excluded the cerebellum, leaving the temporal lobe as the other most likely site for such an abscess. Operation several days later showed the presence of a large abscess in the temporal lobe.

Case VI: E. C., male, 40 years of age, referred for examination February 3, 1923, with the following history: Dizzy spells began one and a half years ago; very short duration lasting only two or three minutes; two or three attacks a month; occasionally severe enough to make him fall, but no nausea or vomiting. Four years ago total deafness in left ear following explosion of a shell while in the service. Three years ago a left-sided complete facial palsy. No staggering. Tinnitus still present in left ear. Examination showed chronic purulent suppuration of the right ear, discharge being very scanty, thick and offensive. The left ear showed the presence of an old, healed chronic purulent process. The hearing in the left ear was somewhat reduced for the 200 fork for both air and bone conduction, but the high tones were heard well. There was total deafness in the left ear.

Spontaneous phenomena: No spontaneous nystagmus. Station very poor with tendency to fall to right and backward. Pelvic girdle movements poor. Spontaneous past-pointing of left arm to left. No nystagmus or vertigo on turning to right. On turning to left 11 seconds of nystagmus with 8 seconds of vertigo. Practically no past-pointing. Douching left ear produced no responses whatsoever from either vertical or horizontal semicircular canals. Douching right ear, no responses from the vertical semicircular canals, and horizontal nystagmus of a fair amplitude from the horizontal. This nystagmus, however, lasted only a very short time. Differential diagnosis between labyrinthine and intracranial lesion in this case was quite difficult. The total absence of function on the left side—hearing and vestibular responses—could be accounted for on the basis of an old destructive labyrinthitis. The absence of responses from the right vertical semicircular canals could possibly be the result of the then existing purulent process. It must also be remembered that the response from the right horizontal canal lasted but a short time.

The following findings, however, pointed towards central lesion: (1) Fair hearing in the right ear and fair response from the right horizontal semicircular canal with absent responses from the vertical canals. True, hearing by bone conduction on that side was shortened but the hearing for high tones was good. While the horizontal canal response could be construed as impaired, it would be entirely out of proportion to the impairment in the vertical semicircular canals which were completely out of function. (2) The pelvic girdle movements and station in general were very poor. On the whole, the evidence in favor of central lesion was considered the stronger. Such a lesion would naturally have to be located in the angle on the left side. Operation subsequently disclosed the presence of a large tumor in the left cerebellopontile angle.

In nonsuppurative cases with aural symptoms, the vestibular tests are frequently the only ones that will lead to a diagnosis. This is especially true of cases complaining of deafness and vertigo. The following case is particularly interesting:

Case VII: J. K., male, age 27, became deaf in the right ear five years prior to examination. Went to an aurist who treated him for his deafness but without results. A year ago he began to have double vision. As recently as last June, that is, three months prior to examination, still under the care of otologists, he was advised to have his tonsils removed in the hope of improving his hearing. This was done, but again without beneficial results. At the time of examination there was found a spontaneous nystagmus upward. The right ear was stone deaf and nonresponding to all forms of stimulation, in all of its portions. The left ear had good hearing, no responses from the vertical canals on douching, but good nystagmus and vertigo from the horizontal canal. Of course, the vestibular tests definitely indicated a brain lesion placed in the right cerebellopontile angle. Operation a few days ago over the region of the angle showed presence of a neoplasm. Had the other aurists examined their patient by means of the vestibular tests, they could easily have made the diagnosis.

This case illustrates the importance of the otologist in lesions of this type. As elsewhere pointed out, the first symptoms of a cerebellopontile angle tumor are deafness and vertigo, occasionally only deafness, and the aurist is the first physician consulted. Since the angle is a fairly common site for brain tumor, these errors are not infrequent and cannot be avoided unless a vestibular examination is carried out. It may also be repeated here for the sake of emphasis that in this type of lesion the vestibular findings are most definite and positive and will very seldom lead the examiner astray.

Case VIII: Mrs. F. E., 58 years of age, referred with the following history: Three years ago had sudden attack of nausea and vomiting of several days' duration. An otolaryngologist was first consulted who diagnosed her case as an affection of the inner ear and treated her throat and ears for about a year. She improved; the dizzy spells became less severe and less frequent. One year ago had her tonsils removed which apparently cleared up her ear condition. Several months prior to the examination, however, she suddenly developed facial twitching of the right side with a drooping of the right eyelid. Examination of teeth and accessory sinuses was negative. A neurologist was consulted who diagnosed neuritis. Two weeks ago had a violent dizzy spell, felt herself going in circles and could not stand on her feet. Was then referred for vestibular examination. Hearing in the right ear was very poor, the deafness being of the mixed type with the nerve element predominating. Hearing in the left ear good. No spontaneous nystagmus or past-pointing. Station good but the pelvic girdle movements poor. Turning both to the left and right produced good nystagmus, vertigo and past-pointing. The right ear, when douched, produced prompt, active responses for nystagmus, vertico and past-pointing from all canals. Douching the left ear produced prompt, active responses from vertical semicircular canals but the horizontal canal produced distinct rotary eye movements instead of horizontal movements.

It was difficult to explain the symptoms in this case on the basis of a peripheral lesion as assumed by the laryngologist who first saw her. On the right side cochlear function was practically destroyed, but there was perfect function of the rest of the labyrinth. On the left, or so-called good ear, the cochlea was perfect but the horizontal canal produced perverted responses. Toxemias very seldom produce a picture of this sort. What is more, a perverted response usually indicates a disturbance of the pathways in the brain-stem. The case was, therefore, considered to be most likely one with minute lesions, probably vascular, on both sides of the brain-stem, perhaps thrombosis of some of the smaller branches of the inferior or middle cerebellar artery. The cerebellopontile angles, as well as the cerebellum, could be definitely excluded. In a later communication, the neurologist who treated her, reported that the subsequent course of the case verified the diagnosis.

SUMMARY

1. Every case of acute mastoiditis should have, wherever possible, an examination of the vestibular apparatus. Where complete examination is impossible, a caloric test of the good or nonsuppurating ear, is sufficient. A failure of the vertical semicircular canals to respond when the horizontal canal produces good nystagmus, vertigo and past-pointing, should be considered as a definite indication for early surgical interference.

2. In cases of chronic middle ear suppuration, a vestibular examination may discover evidence of intracranial involvement not obtainable in any other way.

3. Every patient with unilateral deafness should have a most careful vestibular examination. Without these tests it is impossible to exclude an early case of cerebellopontile angle lesion.

4. Every otologist should be thoroughly familiar with the technic of a vestibular examination and should be able to differentiate between a peripheral and central lesion.

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DISCUSSION

Dr. Seth A. Brumm (Philadelphia, Pa.): It gives me special happiness indeed to have the opportunity of discussing this very excellent paper by Dr. Fisher: first, because of the very close association I have had with Dr. Fisher for the last eight or nine years in this work, and because Dr. Jones, Dr. Fisher and I gave birth to the first course in neuro-otology in this country; second, because I feel a great deal of propaganda is necessary among many delinquent and misunderstanding otologists, and the clearing of a foggy atmosphere among neurologists on this subject.

Gentlemen, let me once and for all make it clear that we never did nor do we now claim we have found the panacea for all intracranial ills. All we say is that in the vestibular tests we have an instrument which is a helpful guide in intracranial diagnosis. To the otologist I wish to say it is just as important to know the uses of vestibular tests as it is for an ophthalmologist to know the use of the ophthalmoscope or how to elicit certain phenomena such as the Argyle pupil, the Werneke sign, and so forth. To the neurologist I wish to say we are not as much concerned in the exact anatomy of brain tracts as we are in the ability to produce certain reactions and to be able to interpret the deviations from these normal and well established vestibular reactions.

Is it not fair to ask whether the toxemias of tuberculosis, nephritis, copremia, anemia, hypo- and hyperblood pressure have any deleterious influence on the vestibular mechanism? What are the neuro-otological symptoms in encephalitis, hydrocephalus, syphilis and intracranial neoplasms—yes and in some cases of epilepsy? Is spontaneous nystagmus and the perverted and inverted nystagmus found after vestibular stimulation a psychic phenomenon? Is there no such symptom as vertigo and do not asynergic movements mean anything in our symptomatology? To these many disturbing questions I have no hesitancy in saying that the vestibular tests will present many avenues of clarification.

Wherein have we been successful in intracranial diagnosis? More especially in middle fossa cases of high involved Landry's disease, insular sclerosis and in that type of case where changes occur from day to day in your findings, such as are seen in rapidly increasing neoplasms causing marked intracranial pressure which may mask the true position of the lesion and present more marked symptoms because of decided pressure in some distant portion of the brain.

We also see failure of conclusion in transient toxemias, where there is a changing picture and also in those cases where there is readjustment of the brain in neoplastic growths, especially when we are dealing with cysts and abscesses.

Vestibular tests are of diagnostic value in lesions of the posterior fossa and to a certain degree of certainty in the anterior fossa.

We do know that, given deafness, failure to produce vertigo, and nystagmus, we have a cerebellopontile angle tumor. We do know that with a complete block of both canals at one side and the loss of function of the vertical canal of the opposite side associated with normal function of the horizontal canal of that side we are very sure that we have a pontile lesion.

We have made a differentiation between peripheral and central occular paralysis. We can make a differentiation between peripheral and central lesions, can determine whether the lesion is or is not of a toxic nature, and in many, many cases whether the lesion is central, and are able to locate its position.

Dr. George W. Mackenzie (Philadelphia, Pa.): I do not agree with the essayist when he claims that the caloric test is more important than the galvanic. I think all tests should be made and considered collectively. Had it not been for the fact that I was consistent in making the galvanic test routinely I should never have been led to the discovery of the fact that there is a difference between the disease neurolabyrinthitis syphilitica, and labyrinthitis syphilitica tarda which I was privileged to present before the Laryngological Society of Chicago. In the case of neurolabyrinthitis syphilitica the galvanic reaction is negative, while in labyrinthitis syphilitica tarda the galvanic reaction is positive.

I do believe there is a wonderful field for the practice of the vestibular tests.

Dr. Ewing W. Day (Pittsburgh, Pa.): I should like to call the attention of the members to the work of Wishart in the report made from the Massachusetts General Hospital Eye and Ear Infirmary. It consists of eleven cases of brain tumor, with complete clinical study, and their findings at operation and autopsy. His conclusions were that with our present status of labyrinth operation we could differentiate between tumors above the tentorium and below; below it we could differentiate between intracerebellar and extracerebellar. He found in tumor of the frontal lobe there was an involvement of the vestibular auditory apparatus. In extracerebellar tumors there was involvement of both the cochlear and vestibular unilaterally. In intracerebellar tumors there is no involvement of the auditory part of the nerve, but bilateral involvement of the vestibular apparatus and almost symmetrical involvement of both vertical semicircular canals.

Dr. Rorert J. Hunter (Philadelphia, Pa.): It is certainly of importance to study the vestibular apparatus in all cases of ear disease.

One point I want to make is that in the chronic cases in which we find the vertical canals are not functioning, I think great care must be exercised in interpreting that as an indication for operation. I am sure the Doctor will agree with me that all the findings in the case must be considered, because we find the vertical canals do not function in so many cases, even without suppurative ear disease.

Dr. Fisher (in closing): I agree with Dr. Day that Dr. Wishart's recent paper was a splendid contribution to neuro-otology, but I intentionally avoided touching on the subject of brain tumors. For the last few years I have devoted my attention to the uses of neuro-otology along purely otologic lines and I feel that the experience, as presented in the cases cited in this paper, was of great value and more than compensated me for the work done. In many mastoid cases, where the diagnosis is not quite clear, and where one hesitates between immediate surgical procedures and watchful waiting, I found that the absence of responses from the vertical semicircular canals of the opposite ear was a reliable danger signal.

I did not say anything about the galvanic test because I am not sufficiently well acquainted with it. Although I have used it in many cases, I have been unable to learn from this test as much as Dr. George Mackenzie does. I have learned to rely rather upon the turning and douching tests which, while perhaps somewhat grosser, are nevertheless more readily observed and more accurately recorded.

DIAGNOSIS AND TREATMENT OF CHRONIC MAXILLARY SINUSITIS*

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The importance of recognizing disease of the antrum has been increased by recent opinions regarding the etiology of certain chest conditions that are nontuberculous.

In 1921 W. V. Mullin and Gerald Webb called the attention of the profession to the relationship between sinus disease and bronchiectasis. Dunham and Skavlem studied 389 cases referred to them as tuberculous, among which 28 per cent were found to be nontuberculous and classified as follows:

Bronchiectasis, 25.	
Secondary to infected antrums	8
" " " ethmoids	4
" " " ethmoids and antrums	13
Apical Catarrh, 42.	
Secondary to infected antrums	16
" " " ethmoids	3
" " " ethmoids and antrums	17
" " " tonsils	3
" " " teeth	3
Unresolved Basal Pneumonia, 18.	
Secondary to infected antrums	3
" " " frontal sinus	11
" " " ethmoids	4

The antrum was the most frequent single sinus involved and in most cases symptoms referable to the head were absent so far as the patient was concerned.

I think it has been the experience of all that maxillary sinus disease varies in its intensity, and that the most foul and objectively the worst cases, cause the least systemic disturbance.

Williams makes this statement: "The antrum discharging much pus disturbs the patient with the discharge, obstructed nose, crusts and polyps, but health quite good. The latent case however, has no pus in the nose, no local symptoms, the patient is depressed, neurasthenic, anemic and in indifferent health." The recognition of the latent type of antrum is difficult, and it is to obtain help in this problem that prompted the presentation of this paper.

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No single procedure gives conclusive evidence of the absence or presence of the latent type of antral disease. It is only by putting together the history of the case and results of examination that a conclusion can be reached. Personally, I feel that it is yet impossible to be confident that disease is not present without direct inspection of the antrum itself.

There are three clinical types of antral disease. One type gradually merges into the other so that all grades of pathological conditions exist between the profuse suppurative type and the normal sinus.

The first type has profuse discharge, often sterile, with polyp formation in the nose and in the antrum and is classified as chronic suppurative maxillary sinusitis with polyp formation.

The second type is chronic maxillary sinusitis with little or no pus in the nose, no polyps in the nose and few in the antrum, the mucosa thickened, and a positive bacterial content. If polyps are present in the antrum they are most frequently found around the ostium.

The third type, serous maxillary sinusitis, is most frequently recognized by the history of the case. Whether it is a definite pathological entity is yet to be established. The patient's history is the most reliable clue to its presence, as all other findings are usually negative. The patients complain bitterly of dropping in the postnasal space, although on examination nothing is ever found. Occasionally they will say that on stooping, a few drops or a teaspoonful of clear fluid will run from the nose. The mucosa is very little thickened, with no polyp formation either in the nose or the antrum.

Diagnosis: The first, an important step, is a careful history. No detail is of so little importance as to be omitted. Previous illnesses should be gone over carefully, particularly the frequency of head colds and influenza. Examination of the nose should be thorough and repeated. Particular attention should be paid to the middle meatus and postnasal space. The postnasal space should be studied with good illumination, with postnasal mirror, and the pharyngoscope. The pharyngoscope should be used as a routine in examining nose and throat cases in order that the examiner may become acquainted with the normal.

The use of the probe is too often neglected. Bogginess of the mucosa under the middle turbinate can in this way be discovered, which does not exist in normal nares.

Persistent redness and hypertrophy behind the posterior pillar of the tonsil and extending upward behind the palate is suggestive, particularly if unilateral.

Transillumination should be used in every case. It is of value if positive but if negative should not be considered conclusive. Transillumination should be done in a dark room. The lamp should be small, brilliant, and one that does not heat quickly. Both oral and orbital illumination should be used. When using the orbital method, push the lamp deeply into the orbit under the eyeball on the lower lid, the same position in each orbit. The use of two lamps simultaneously has been suggested but it is difficult to have the lamps of the same luminosity. In the mouth, the lamp should not be placed against the hard palate but in the median line with lips closed. The value of transillumination is in comparing the intensity of light transmission of the two sides.

Irrigation: Irrigation may be accomplished either through the middle or inferior meatus. In the middle meatus the natural ostium can be used in a large percentage of cases.

The method used is as follows: after cocainization, a Reiter sound is passed under the middle turbinate and the opening located. The sound is gently pushed through the opening into the antrum. A cannula with the same curve as the sound is easily passed. The irrigator is then attached. There is very little discomfort to the patient. This procedure can be repeated frequently with apparently no trauma or bad after effects. If the natural ostium cannot be found, a curved trocar can be passed through the lateral wall to the antrum just as readily as in the inferior meatus, with the same danger to the patient.

If the inferior meatus is used, the lateral nasal wall is cocainized and a needle of the Lichtwitz type is passed upward, backward and outward into the antrum. This is very easily accomplished in most cases but occasionally a difficult case is encountered when much pressure is needed to puncture the antral wall. Very rarely a hammer will be needed. After the needle is in the antrum, a wire or stylit is passed that has a notch just at the place where the end of the wire passes the point of the needle. This clears the needle and determines how far the point is from the opposite wall. A hand bulb syringe is then attached. Very little force should be used, and if the water does not return freely, all efforts should cease as the ostium is in this case blocked, the antrum full of polyps or thick secretion, the needle passed improperly or blocked. If the water returns turbid or flaky, disease of the antrum is suspected.

While irrigation in this manner is valuable as a diagnostic procedure, it is not without danger to the patient. After years of experience with irrigation no accident had occurred, but last year during a second irrigation the patient's face became pale, skin cold and clammy, pupils dilated, pulse very weak and respiration suspended. After an hour of artificial respiration, the patient gradually recovered. This was such an alarming condition that it prompted a study of the literature.

Gording found nine cases reported to which he added seven occurring in his own practice. Four deaths occurred in the former and two in his own. Claus cited four cases. One recovered in ten minutes, another in six days with paralysis of the right and left leg. Claus thought this an arteriospasm due to novocain and adrenalin. A young woman, on the third irrigation, developed cyanosis, loss of consciousness and uncountable pulse, dilated pupils, and death in a few minutes. In this case Claus stated that the needle was inserted and air could be heard passing into the nose. With the fluid, resistance suddenly developed so that more than ordinary force had to be used. In a woman, fifty-six, Lichtwitz needle and air were injected at the same moment. The patient lost consciousness and died. A postmortem revealed hemorrhagic infiltration of the epicardium of the right ventricle, through the ventricular wall to the endocardium. No air in the heart; in the brain hemorrhagic areas.

Hajek states that now and then long attacks of unconsciousness may occur in exploratory puncture of the antrum, especially in those with narrow ostia maxillæ, not in any sense fainting fits or hystero-epilepsy. He has repeatedly seen long periods of malaise and cold sweats and palpitation. Gording attributes these symptoms to vagus irritation through the second branch of the fifth nerve.

Killian, in 1913, reported a case of sudden death after antrum syringing and at postmortem nothing was found.

Streit of Koningsberg stated that he had observed temporary paralysis of both legs and temporary disturbance of vision following irrigation. Siebenmann thought giddiness after irrigation of antrum due to irritation of vagus through the second branch of the fifth nerve.

Neuenborn reported a case, patient twenty-three, in which the left antrum was washed twice with no trouble. The right antrum was washed two days after the last washing of the left, and upon removal of the cannula the patient fell from chair, respiration ceased, pupils fixed, body became rigid. After two hours' massage of diaphragm, spontaneous respiration was established with recovery in four days.

Gording reports one case that recovered but had paralysis of the arm and had no interest in his work for weeks. The second case, after three years, had numbness in the left foot. Cause of death in these cases is unknown but it is thought by Gording to be due to air embolism. The collapse is so sudden and alarming that irrigation of the antrum with needle inserted under the inferior turbinate has been abandoned.

When irrigation through the natural ostium fails, the following method is used:

A four millimeter cannula and trochar is employed. The point should be sharp, which prevents pushing inward the thickened mucosa. If a needle without a trochar is used, the lumen might be blocked with a piece of bone, making it blunt. The mucosa, being thick, is not punctured but dissected from the bone. In doing radical antrum operations one often observes a good-sized piece of the lateral nasal wall broken when making initial opening from the nasal side. A similar fracture might occur with a needle, loosening the mucosa over a considerable area. If the trochar and cannula are thought to be in the antrum, the trochar is removed, and a probe inserted to determine the position of the cannula. One should be careful that the cannula is not against the opposite wall of the antrum. Irrigation is then carried out by passing a small irrigating tube through the cannula. The return flows back through the cannula around the irrigating tube. The dangers of irrigation can thus be avoided and the value of the procedure as a diagnostic measure retained.

The three dangers to be avoided are the use of force with the syringe; failure to insert the needle or cannula through the mucous membrane, leaving it between the membrane and the bone; and insertion of the needle too far in, either infringing upon or in the mucosa of the opposite side.

Inspection: The nasopharyngoscope has been suggested as a valuable instrument for inspection of the antrum and determining the condition of the mucosa. This method has been tried through a cannula and through a large enough opening under the inferior turbinate to admit the instrument. It has not been found of any value.

Dennis and Mullin have advocated direct inspection through the canine fossæ. I believe this to be a justifiable procedure and it gives us the most conclusive evidence of the condition of the antrum. It is easily accomplished and if the antrum is diseased, conservative or radical treatment can be instituted at once.

X-ray: X-ray studies should be made of every suspected sinus case. Both single and stereoscopic films should be employed. Not all negative or positive reports are conclusive but should be considered in connection with all data obtainable. Properly interpreted, the x-ray is the most valuable of all diagnostic procedures.

If the x-ray shows a cloudy antrum and the nares on examination are negative, the antrum should be opened under the inferior turbinate for diagnostic purposes, or a trochar and cannula used as described above. If the nose contains pus and polyps, one or both, nothing further need be done to establish a diagnosis.

Treatment: If the x-ray shows a cloudy antrum and irrigation with a cannula further confirms your suspicion that the antrum is diseased, an opening should be made under the inferior turbinate for ventilation and drainage. This is accomplished by a window resection following the method of Mikulicz and Friedländer, or the so-called Krause Mikulicz operation. We use the modification described by Lathrop, which consists of removing enough of the anterior end of the inferior turbinate, only in cases where the inferior turbinate is tight against the outer nasal wall, to give free access to the lateral wall of the nose for after-treatment of the antrum. Mithoffer has suggested that a V-shaped piece be removed from the middle of the inferior turbinate instead of the anterior end, as crusting is less annoying. The flap of mucous membrane, as described by Dahmer, is no longer used. The antrum is opened with any of the antrum punches and enlarged posteriorly with a biting forcep and anteriorly with a rasp. Opening should be made to the floor of the nose and upward to the attachment of the inferior turbinate. This gives free ventilation and free access to the antrum. Treatment through this opening is continued daily as long as improvement continues. If, after two or three weeks of treatment, the condition is not satisfactory, radical operation is advised.

Shambaugh makes the statement that he does not believe that the presence of pathological degeneration of the mucous membrane of the antrum renders the case unsuitable for this method of conservative treatment. There can be no doubt that extensive changes in the mucous membrane of the antrum return to a normal condition after allowing free ventilation. I believe that this procedure should be used in chronic maxillary sinusitis without much pus in the nose and no polyps, as about sixty per cent can be cured.

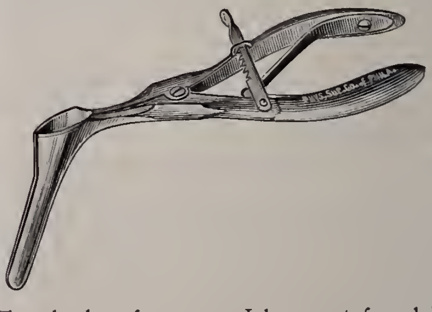
If the x-ray shows a cloudy antrum, pus in the nose with polyps, irrigating fluid returns foul and muddy, some form of radical operation should be undertaken.

The radical operation used is a modified Caldwell-Luc under local anesthesia. One-half of one per cent novocain is injected deeply under the upper lip. When the tissues are sufficiently infiltrated, an incision extending from the median line to the first molar tooth is made, down to the bone and the anterior surface of the superior maxillary exposed. An opening is made into the antrum and sufficient bone removed to obtain a clear view of the entire antrum. A twenty per cent solution of cocain in gauze is packed into the antrum, after which the internasal work is done, which usually consists of removal of the anterior end of the inferior turbinate and removal of polyps, if any, from the nose. The mucous membrane of the sinus is then dissected loose. In many instances it can be removed *en masse*. The natural ostium is dilated and thoroughly cleansed. A large opening is made under the inferior turbinate to the level of the floor of the nose. The antrum is not packed and no sutures are used in the mucous membrane of the mouth. The after-care consists of irrigation of the antrum, beginning the next day and continued until healing takes place.

The results are good when the operation is thoroughly done. The patient is safe from systemic absorption, but the antrum never returns to normal.

DISCUSSION

Dr. John J. Sullivan (Scranton, Pa.): I agree with Dr. McMurray in most details, except in the operative procedure. I cannot understand why anyone wants to remove any part of a normal inferior turbinate bone in a maxillary sinus operation. It is absolutely unnecessary. Several years ago I made an anterior cut, something on the manner of Sluder, pushing the bone up and removing the wall underneath that flap. For the last few years I have not found it necessary to remove a bit of the inferior turbinate bone where it is normal. I place this instrument under the inferior turbinate and infract it upwards and that gives



me plenty of play. With an ordinary sized speculum I can see the whole wall. Then with a rasp going back to the soft spot (pars membranacea) the rasp is brought forward and down, then back and down. With an ordinary mastoid curette the bone is broken down, and the whole bone can be picked out. Then the floor is lowered, the flap pushed over and gauze put over. There is no removal of turbinal tissue. Neither do I see the necessity for it in the radical operation.

The Doctor spoke of puncturing the ostium maxillæ. I have never done that. I think it is dangerous; you may puncture the eyeball.

I want to report a case of bronchiectasis that was sent in by the family physician for a tonsillectomy. The patient had diseased tonsils, which were removed. About six months after she gained in weight and the cough lessened. We are still using the Coakley trocar and cannula for maxillary puncture.

Another case had bronchiectasis, the nasal examination showing a pansinusitis on both sides. I did a radical operation (bilateral Killian and Denkle) and the patient improved for ten years, then had a relapse and finally developed bronchopneumonia. I posted her and found a tack in the lung. This patient had been x-rayed, but as Dr. Jackson says, it is a wise plan, if a patient coughs, to x-ray the chest as well as the sinuses and teeth.

Dr. Robert F. Ridpath (Philadelphia, Pa.): Although the title of Dr. McMurray's paper reads "Diagnosis and Treatment" he touches very lightly upon diagnosis. He mentions that there are three kinds of maxillary sinusitis but gives no symptoms except that one has pus in the nose, another giving no subjective symptoms, while the third is characterized by polyp formation in the nares. I think he should have elaborated a little more on these points.

One of the paramount symptoms of maxillary sinusitis is the headache. The pain is not over the sinus but at the supra-orbital notch. It is dull in character and comes on at a specific time, occurring when the sinus cavity fills. At this time we not only have the headache but the toxicity and other symptoms. We therefore have a typical headache coming on around ten or eleven o'clock and lasting during the day.

Transillumination I consider of very little value in diagnosis. I have almost discarded it. I feel we have many more means of diagnosis of greater value. It is a routine method with Dr. Skillern and myself to wash out the maxillary sinus on the least suspicion. If you do not get pus, but have other symptoms pointing towards a diseased condition of this sinus, do not take the washing as positive assurance that there is no disease.

Dr. W. E. Brown (Pittsburgh, Pa.): I think transillumination is very valuable. I think that, just as we use the ophthalmoscope in every eye case, and the otoscope in ear conditions, so we should transilluminate every case that comes into the office. Since transilluminating every case I am finding about three times as many sinus cases as I did before.

Another valuable point is that we are able to become more familiar with normal sinuses, because they vary a lot in the thickness of the bone and overlying tissue, and unless we are thoroughly familiar with the normal sinus we fall down on the abnormal.

In my experience I find that nasal discharge is the most constant symptom in sinus disease. We have all had patients in which there was no other symptom except a profuse discharge—a typical ozena. I have in mind a patient—mucous membrane atrophic and pale; irrigation negative, but transillumination suggestive; and substantiation by the x-ray was positive on one side. This patient had had the condition for eight years and had undergone treatment for four years, but no one had transilluminated the sinuses or advised x-ray. I opened both sinuses by the Caldwell-Luc method and found the mucous membrane very pale and atropic, but no pus. I curetted and in two weeks the ozena cleared up. I do not know why, but I think there must have been a chronic condition which I got rid of by curettage and increasing the blood supply to the antrum.

Another point is the anesthesia. I prefer local anesthesia for three reasons: first, it is easier; second, there is less hemorrhage; third, there is much less danger of pulmonary abscess or any infection lower down. The method I use is nerve blocking with novocain and adrenalin, blocking the infra-orbital nerve, the second division of the fifth nerve and the palatine nerve.

Dr. William B. Chamberlin (Cleveland, Ohio): I want to add a word regarding the danger from antrum puncture. I always have believed, and still believe, that the only way to make an absolute diagnosis of pus in the antrum is by needle puncture. Transillumination and x-ray are suggestive, but they do not give a final diagnosis. I have always relied upon antrum puncture as a means of diagnosis and sometimes of treatment. I still do, but not with the same confidence as before last spring. At that time I washed out a woman's antrum. There was a return of foul pus. I injected air, and there was an immediate emphysema of the neck; also an emphysema in the right peritonsillar region, and a marked emphysema beneath the right side of the tongue. This patient had an incision of the neck three days later by Dr. Crile. Later on I went in between the cheek and antral wall and evacuated a large quantity of serum. I also made an incision in the right peritonsillar region and evacuated pus. This patient was apparently comfortable for four or five days; the temperature was low. But suddenly she became unconscious and went out within a few hours.

No one who is acquainted with the literature on the subject, and no one who has had any clinical experience will puncture an antrum without a thorough appreciation of the danger involved. How we are going to avoid this danger I do not know. I still think there is nothing to do but puncture the antrum, but with the idea that it is accompanied with great danger.

Dr. McMurray (in closing): With reference to Dr. Sullivan's remarks regarding the removal of the inferior turbinate, I feel that where you want to drain and ventilate the antrum, and the inferior turbinate is tight against the outer nasal wall, you remove a part of the anterior end or you do not get the result you want. If there is plenty of room under the inferior turbinate for drainage and ventilation we sacrifice none of the inferior turbinate.

What I wanted to bring out was that in latent cases we have so few symptoms that we must rely on the x-ray, irrigation and inspection for diagnosis. While some form of irrigation is valuable, I believe the ordinary puncture is dangerous and we must seek some safer way. Consequently, we use a larger trocar and cannula. It is safer than the needle. We do not puncture the antrum as often as we did before we began using the natural ostium route. We must use irrigation, but with extreme care.

VINCENT'S ANGINA*

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Ulceromembranous sore-throat came to be known as Vincent's angina after the year 1896, when Vincent discovered that the same microörganism which was always found in connection with membranous sore-throat with ulceration, was also found in hospital gangrene. He made extensive study of the infective principle and wrote several articles describing it and the disease which it caused, so that it came to be generally known as "Vincent's Angina."

However, an organism found constantly with the disease was first discovered by Rauchfuss in 1893, and in 1894 Plaut found that two organisms were always found together in association with this disease. He described them as a fusiform bacillus and a spirillum. They are anaërobic, do not grow on culture media on which other microörganisms usually sought for in the throat are grown, but take ordinary strains readily and are therefore only found by a direct examination of a smear taken from the membrane or ulcer or currettage from the local lesion. Cultures are sent to the laboratory and, failing to get a growth by the usual methods followed in examining for diphtheria, etc., a negative report is returned. This doubtless accounts for the apparent rarity of the disease.

The bacilli vary from six to twelve micra in length, are fusiform in shape and are usually, and some say always, found in association with a fine spirillum which is extremely long and on a hanging drop slide is seen to be motile. Of late years many eminent authorities claim that the bacillus and the spirillum are but the one organism in different stages of development. (Tunnicliff, Wright and others.) This theory is coming to be quite generally accepted.

As a predisposing factor in the causation of this disease, age is unimportant. It may occur during any period of life, but seems to be more common in early adult life. The condition of the teeth is important, as a large majority of the cases reported had bad teeth or gums. Malnutrition also plays an important part. Moderate use of tobacco or alcohol seem not to count materially, although excessive use of sweets and meats does. There are a few cases where contact could be definitely traced with others who had similar symptoms, but nearly always no such contact could be proved. One attack does not confer immunity.

As to the symptoms, they vary a great deal as to character and severity. The onset is gradual, characterized usually by malaise, headache, backache, sometimes vomiting and diarrhea, pain on swallowing, quite severe pain in the throat and out of proportion to the other symptoms in the degree of its severity and to the temperature, which is only 99 to 100, and to the pulse, which runs from 80 to 85. The cervical lymphatic glands are enlarged and tender. The breath is fetid; in most cases markedly so. The odor is characteristic.

Early in the course of the disease, usually about five days after the onset, a membrane appears, usually on one or both tonsils, but may form on the pharyngeal wall, the palate or buccal mucous membrane, or it may spread to these areas from the original site. The membrane is of a dirty gray or yellowish color, is friable and when removed leaves a raw bleeding surface and promptly re-forms. The ulcer shows a tendency to extend rather deeply into the tissues and is prone to leave considerable cicatrization. This disease is not self-limiting, the ulcer sometimes healing in ten to fifteen days, but in severe cases often persisting for several weeks or even months.

The element of prime importance in the author's opinion, in the discussion of this subject is the differential diagnosis. This disease is often confused with other diseases or conditions which have as one of their manifestations a membrane or pseudomembrane appearing in the throat or mouth. This is particularly true of diphtheria and the mucous patches or ulcerations of syphilis. However, the fact must not be lost sight of that any one of several microörganisms may cause a pseudomembrane in the throat, notably streptococcus, staphylococcus, pneumococcus, micrococcus catarrhalis or bacillus coli.

In the great majority of cases the diagnosis can be made from the clinical picture, noted above, but there are often borderline cases in which the diagnosis is not so easy. In these cases, particularly, examination of a direct smear should be made. Then, too, a patient may be suffering coincidentally from two or more of these infections.

It is quite likely that this disease is most frequently mistaken for diphtheria. This is because of the close resemblance of the membrane in the two diseases. The most important factor in the differentiation, aside from the examination of the smear, lies in the severity of the constitutional symptoms. Diphtheria is a constitutional disease with local manifestations, starting off with a chill, the temperature rapidly rising to 102 to 104 or higher, with marked prostration and usually with albuminuria; whereas Vincent's angina may be classed as a local infection accompanied by mild constitutional symptoms. Diphtheria is more rapid in onset and runs a shorter course. The disease under consideration often lasts several weeks. The membrane is more friable, and when removed, quickly reforms. The ulceration is deeper and the inflammation extends deeply into the tissues. In diphtheria there is but slight involvement of the lymphatic glands, but little pain on swallowing and, of course, the presence of the Klebs-Löffler bacillus, on culture.

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* Read before the Section on Eye, Ear, Nose and Throat Diseases of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 4, 1923.

† Deceased June 4, 1924.

In syphilitic lesions of the mouth and throat the membrane is more irregular in shape, not so frequently on the tonsils, is thinner and less adherent. There is no pain on swallowing, and the lymphatic glands are not enlarged nor tender. The clinical history and a positive Wassermann should settle the question.

Even then it might be coexistent with Vincent's angina. The fusiform bacilli and the spirochetes are frequently present in diphtheria, syphilis, scarlet fever, measles, or with the other nondiphtheritic pseudomembranous inflammations produced by the organisms enumerated above.

In a majority of such cases of mixed infection, the organism of Vincent's angina, while it might be the predominating one and the actual cause of the disease, is usually entirely overlooked, as mentioned above, because it does not grow on the culture media used in the examination for pathogenic organisms.

In regard to treatment, attention must be paid to cleansing the teeth and gums. Improper habits of eating must be corrected. Particularly should the intake of any excess of proteins and sweets be reduced or temporarily prohibited. Any departure from strict sanitary conditions in the patient's surroundings should be corrected. Chlorate of potash was formerly considered a specific. Others have been just as enthusiastic over the application of a 5% solution of salvarsan in glycerin. Carroll removes the membrane and applies daily a 2 to 10% solution of nitrate of silver to the ulcer. King, of Toledo, considers a 10% solution of copper sulphate applied daily a specific.

Several other able laryngologists remove the membrane, wipe or brush the ulcer with tightly wound pledgets of cotton, wipe with full strength of peroxid of hydrogen and apply a 5 to 20% solution of trichloracetic acid.

DISCUSSION

Dr. Matthew S. Ersner (Philadelphia, Pa.): This disease is clinically and pathologically a distinct entity. It is, however, readily confused with other anginas associated with plastic exudates and is most often mistaken for diphtheria.

Diagnosis: The history is very important as it reveals a subacute course of gradual onset varying from a slight discomfort in the throat to severe pain. Probably the most striking objective and subjective symptom is the offensive odor and profuse salivation. The lesion may be found anywhere in the mouth, and is most often seen as a white ulceration around the gingival area, particularly around the third molar, lower bicuspid and incisor regions.

We as otolaryngologists are naturally interested in the lesions affecting the tonsils, pharynx, nasopharynx, etc. Upon examination we find a membrane which is of a dirty yellowish or greenish color which, when removed, leaves a bleeding surface with a destructive crater. A distinct diagnostic point to bear in mind is that there is no marked area of inflammation outside of the ulceration. The absence of surrounding inflammation undoubtedly explains the chronicity of the disease.

Diphtheria is characterized by its acute onset, with marked constitutional disturbance and a distinct leukocytosis, while in Vincent's angina we find no perceptible increase in the leukocytes. The diphtheritic membrane, when removed, leaves a bleeding surface without destruction of the underlying tissues. There is also marked hyperemia of the tissues surrounding the diseased area. It is important to bear in mind that the Vincent's organism, either the spirilla or the fusiform bacillus may normally be found in the mouth. They are invariably present in pyorrhea, gingivitis, mercurial, lead, and arsenical poisoning. One must, therefore, not be misled by a positive report.

Recently I had a case of Ludwig's angina. I sent the smears to the laboratory and the report returned Vincent's organisms. A positive diagnosis is made from the clinical picture and verified by the laboratory findings. The spirilla and the fusiform bacilli will always be found in Vincent's angina by removing the membrane and preparing the slides from the ulcerated area. The carbolfuchsin stain is used according to the Ziehl-Neelsen method. At times it is very difficult to make the finer clinical distinctions between Klebs-Löffler and Vincent's. I then make cultures so as definitely to rule out diphtheria and occasionally administer antitoxin when the history and physical signs are vague. In three distinct instances where blood examinations were made I observed that leukemia was present. The thought that then crept into my mind was: Is leukemia secondary to Vincent's or is Vincent's angina simply a concomitant disease? I could find only the following cases to quote from the current literature. It may be of some added interest to call your attention to these few cases reported in the literature in connection with Vincent's angina.

Packard and Flood (Am. J. M., Sc. 160:883, Dec., 1920) reported a case of myeloblastic (acute) leukemia with Vincent's angina in a woman aged 26 years. She died after five days after admission to Gouverneur Hospital, N. Y. Blood picture showed 190,000 white blood corpuscles with 90% myeloblasts, 3% myelocytes, 1% myelogenes, 3% small lymphocytes, 3% neutrophiles.

Sondern found Vincent's spirillum and fusiform bacilli in twenty cases, and in two cases he was convinced that it preceded the leukemia and was the important agent in causing the condition.

Fehsenfeld (*Med. Klinik,* 17:783, June 26, 1921) reported herpes zoster associated with angina, as did Carr (*Med. Clinics of N. A.,* 5:1615-1622, May, 1922), while

Tarnow (*Med. Klinik*, 17: 1024, Aug. 21, 1921) writes on "Blood Findings with Vincent's Angina," showing a higher leukocytosis in diphtheria and a lower one in Vincent's angina.

Newkirk (*California State J. Med.*, 19: 360, Sept., 1921) also writes on acute lymphocytic leukemia with special reference to throat condition and reports a case.

Dr. H. I. Goldstein, Camden, N. J., told me of a case of a little boy, aged 6 or 7 years, seen by him in December, 1920, who was treated as a case of diphtheria and received 20,000 or 30,000 units of antitoxin on admission to the hospital. Cultures were persistently negative for Klebs-Löffler bacilli. The boy became sick with sore-throat, chill and fever. After several days' treatment at home by the family physician, he was sent to the hospital. His father died of splenic anemia (Banti's disease?). White blood corpuscles 18,500, red blood corpuscles 1,640,000. Numerous spirilla, fusiform bacilli and pneumococci were found in the throat. There were about 75% large mononuclear cells, probably myeloblasts. Blood Wassermann was negative. The boy died in four or five weeks, having had hemorrhages.

The thought must therefore be borne in mind that Vincent's angina is not always a local condition as the textbooks seem to lead us to believe. This problem was quite acute during the war when the so-called trench mouth developed.

I have noticed that the throat infection will clear up when the hygienic condition of the mouth improves. On the other hand, if the hygienic condition of the mouth is not responding, the infection will reassert itself in various parts of the mouth and throat again. It is therefore important that the dental phase be taken care of.

Dr. William Ersner (Phila. Gen. Hosp., Assisting Visiting Oral Surgeon, in Dr. Robert Ivy's service) treat's Vincent's angina of dental origin in the following manner:

During the incipient stage he administers the following treatment: (a) Dakin's solution spray. (b) The membrane is removed by carefully scrubbing the diseased area with a tongue depressor wrapped with gauze. (c) Hydrogen peroxid is applied. (d) Isolate the area from the surrounding tissues with cotton rolls so as to have the area absolutely dry and then apply 10% arsphenamin in glycerin.

On the second day the same prophylactic means are used with an attempt to remove the tartar. If the patient is not too toxic he usually extracts decayed and broken down teeth—not more than two or three at a time so as to avoid an osteomyelitis.

Treatment from our standpoint: Correction of diet especially avoiding proteids, salted smoked fish and carbohydrates.

It seems that the Vincent's organism may remain in the mouth dormant indefinitely but suddenly becomes active when there is some traumatism, such as extraction of a tooth or some dietetic carelessness or some general dyscrasia.

Vincent's organisms grow anaërobically only and the cultures therefore are returned negative.

Hydrogen peroxid is therefore a valuable asset in our treatment. It is used as a cleansing agent and at the same time it permeates into the deeper crevices of the tissues, producing the aërobic media which are unfavorable for their multiplication.

Alkaline solutions should be used excessively as all the secretions in the mouth during the disease are acid in reaction. In fact one could guide his prognosis by the improvement in the reactions as they gradually change from acid to amphoteric and distinct alkalinity.

Electric cautery is employed so as to stimulate fibro-connective tissue formation, and at the same time it produces an area of inflammation surrounding the ulceration.

Among the other applications that I employ at various times are formalin applied locally, Beck's trypto-flavin ½% as a spray, and used as a gargle in a very diluted form.

Jellinek states that in 1919-1920. he treated hundreds of soldiers and civilians with Vincent's infection by using the ethyl chlorid spray. He concluded that it was the freezing that destroyed the organisms, as direct application of the ethyl chlorid did not have any affect.

Internally I use Fowler's solution, arsphenamin intravenously, and tartrobismuthate of sodium and potassium given intramuscularly.

Dr. George M. Coates (Philadelphia, Pa.): Vincent's angina was common during the war and we found that once established in a tent it went through every man in that tent. As a rule, the diagnosis is not hard to make. We must rule out diphtheria and the mucous patches of syphilis. The smear in uncomplicated cases will always show the organism of Vincent. When once established in the deep crypts of the tonsils it is sometimes hard to eradicate. My experience has been that you can keep it under control by any one of various methods, and that once having it under control, it is best to remove the tonsils, because almost always there will be a recurrence.

As to remedies, there are numerous "specifics." Neoarsphenamin, arsphenamin, trichloracetic acid, and many other things will cure. In the army we used pure carbolic acid, and it did just as well. But to keep a case cured, take out the tonsils and look after the gums and teeth, because infection undoubtedly lies around the margins of the teeth.

Dr. N. A. Fischer (Pittsburgh, Pa.): I have at the present time a very interesting case of Vincent's angina in a young man twenty years old. The condition manifested itself three months ago, at which time he consulted a laryngologist who treated him for two months. He presented himself at my office on the 25th of August, and physical examination of the throat disclosed two enormous tonsils with an extremely thick, grayish membrane covering the entire tonsil on both sides. He had great difficulty in swallowing and a slight temperature. Culture from the throat was negative for Klebs-Löffler bacilli. A Wassermann was made and the report came back negative. Direct smear, however, showed the presence of numerous spirilla and bacilli, making this undoubtedly a case of Vincent's angina.

We treated him with a 5 per cent solution of salvarsan, and a 10 per cent solution of silver nitrate was applied at various times; also a 10 per cent solution of copper sulphate. Hydrogen peroxid was used as a gargle, and at the end of several weeks' treatment we found that he had made no progress whatever. A membrane was still present over the entire tonsil. We finally decided to remove the tonsils at this stage, in spite of the membrane and the edema and swelling about the anterior pillars and uvula. We naturally hesitated quite a great deal in proposing a tonsillectomy at this stage. The patient, however, was sent to the hospital and a tonsillectomy performed. There were no untoward results and the patient made an uneventful recovery.

INDICATIONS FOR TONSILLECTOMY*

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INTRODUCTION: In 1919 we undertook the present study in the belief that the exact value of tonsillectomy could be determined best upon the basis of a careful examination of a large number of children before operation with a repetition of examinations at intervals over a long period of time.

We therefore examined children routinely as they entered the tonsil and adenoid ward of the Children's Hospital of Philadelphia in 1919 and 1920, and also included cases in our private practice which were available at that time. For the privilege of using the hospital cases we may express our appreciation to Dr. Francis R. Packard, Dr. James A. Babbitt and Dr. Charles R. Hughes.

The present paper is based upon the results of these preliminary examinations and histories, to which have been added the cases available in the literature. Our own patients totaled 677. Exact data with regard to various indications could not always be obtained, but the number from which the information was derived will be indicated in the text. Before giving any of the results we must discuss briefly certain general factors of importance in any consideration of tonsillectomy.

STRUCTURE AND FUNCTION: In an article on the anatomy, physiology and pathology of the tonsillar structures in relation to cryptogenic infection George B. Wood[1] thoroughly epitomizes the present knowledge of this subject. According to him, the faucial tonsil, with which alone we are concerned, consists of capsule, follicle, interfollicular tissue and crypts. The follicles are composed of large mononuclear cells, which, by mitosis, produce small lymphoid cells. This is the only function of the tonsil about which there is practically unanimous agreement. The crypts are formed by invagination of the surface epithelium, but as it dips into the crypts the subepithelial tissue is lost and in many places even the basement membrane disappears. Since the crypts penetrate deeply into the structure of the tonsils these blind pockets, lined for the most part with only a thin layer of epithelium, offer an ideal structure for absorption. As Wood points out, *a priori* they are more poorly equipped to act as a mechanical barrier against invasion than is the epithelium of the surface of the tonsil and the neighboring structures.

The lymphatic drainage of the tonsils is from the crypts and follicles through the lymphatic radicles in the trabeculæ to the main efferent lymph vessels which lead to the cervical nodes. The tonsil possesses both efferent and afferent blood vessels but afferent lymphatics have not been indisputably demonstrated.

During early life all lymphatic tissue in the body is actively functioning if one may judge from microscopic study and from the tendency to hypertrophy. This has been ascribed to a reaction produced by the irritation of bacteria. Since the various regional lymphatic nodes always become infected after artificial implantation of bacteria into the tissues, this theory seems not unreasonable. In view of the fact that faucial tonsils are the largest lymphatic structure in the mouth and since all the mouth currents tend to pass over the tonsils in their general course toward the pharynx, the tonsil must bear the brunt of foreign infection introduced into the mouth.

The fate of the tonsils may be said to depend upon two factors—the nature and frequency of the infections which it receives and the facility with which it may render such infections innocuous. It is important to remember, therefore, that mere enlargement of the tonsil never *per se* indicates a serious infection, since the hypertrophy simply may instance a physiological attempt to resist infection.

When the lymphatic nodes of the neck also enlarge it means either that the infection has passed through the protecting structures of the tonsil and has invaded what Adami calls the second line of defense, or that the enlargement of both tonsils and nodes are part of a general lymphatic involvement such as occurs in several conditions, notably so-called lymphatic fever, Hodgkin's disease and leukemia. In the latter instances tonsillectomy is, of course, contraindicated. If it were possible easily to gauge the virulence and type of infection on the one hand and the resistance of the host on the other, one could definitely determine which infections are jeopardizing life or vital functions.

BACTERIOLOGY: It is not within the province of this paper to enter too deeply into the subject of the bacteriology of the tonsils and adenoids. Some of the more important studies in this field are of interest, however, in connection with the indication for their removal in certain cases of arthritis, endocarditis and nephritis.

It is well known that the mouth, pharynx and nasopharynx support a numerous and greatly varied bacterial flora. It is common to find that cultures made from the throat will contain such pathogens as the pneumococcus, streptococcus viridans, streptococcus mucosus, influenza bacillus and hemolytic streptococcus (Pilot, Pearlman, Meyer).[2] These organisms are more numerous in the crypts of the tonsils and adenoids than on the surface. Some of the pneumococci are of the fixed types but most of them fall into Group IV. Diphtheroids are frequently found, avirulent diphtheria bacilli occasionally are isolated and sometimes the strain may be virulent.[2] Of especial interest are the studies on the hemolytic streptococcus. This organism is found in many tonsils (29 per cent) which appear quite normal (Hambrecht and Nuzum)[3] and it is present in about 95 per cent of tonsils which are diseased, often as the predominating organism and at times in practically pure culture (Pilot and Pearlman)[2] (Hambrecht and Nuzum).[3] According to Davis,[4] every individual with tonsils harbors hemolytic streptococci in the nose and throat. Before assuming any great importance for the streptococcus and other organisms found in the tonsils, it is necessary, of course, to prove that their presence is capable of harm to the individual harboring them. Certainly beneficial effect is observed at times when the tonsils and adenoids are removed in cases of endocarditis, arthritis and nephritis. The work of Rosenow[5] on focal infection and the elective localization of streptococci is to be mentioned here. The removal of tonsils and adenoids in children reduces the number of organisms such as the pneumococcus, the influenza bacillus and the hemolytic streptococcus in the nasopharynx, but does not cause their disappearance.[2]

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* Read before the Section on Pediatrics of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 4, 1923.

Tuberculosis of the tonsils occurs in about 2 to 4 per cent of patients with pulmonary tuberculosis. Occasionally tuberculosis of the tonsils seems to be primary, at least tubercules are found in the tonsils where there is no history or evidence of tuberculosis elsewhere.[6, 7]

Of interest in this connection also is the study of Caylor and Dick[8] on the number of bacteria in tonsils. The counts varied from 2,062,260 to 16,316,000,000 and the tonsils showing the highest bacterial content per unit of weight were the relatively small tonsils in which chronic fibrous inflammatory changes had occurred. It was the small fibrous tonsil too, in contrast with the large spongy tonsil, which was commonly accompanied by such disease elsewhere as arthritis and endocarditis.

Pathology: When the tonsils are studied after extirpation certain changes are found. The work of Hambrecht and Nuzum[3] probably illustrates the usual findings. The tonsils removed from 218 cases showed the following pathology: Chronic lacunar tonsillitis in 42 per cent; chronic interstitial tonsillitis in 21 per cent; chronic peritonsillitis in 6 per cent; abscess in 10 per cent and lymphatic hyperplasia only, in 14 per cent.

Sex and Race: Three hundred and forty-two of our patients were boys and 335 were girls. Of these, 445 were white, 222 were black, and 1 was Chinese. This large proportion of black children may be explained by the fact that the hospital is situated in the "black belt" of Philadelphia. According to the census of 1920, the proportion of whites to blacks in the whole city was 9.6 to 1 (1,290,253 to 134,229).

Age:

Years	*Number of Children*	*Percentage*
1 to 3	52	7.9
4 to 6	160	23.6
7 to 9	300	44.3
10 to 12	165	24.3

The table above shows the age incidence of our own cases. In the various abstracted articles the exact age is not always given, but we have utilized only those articles dealing with children. There has been a good deal of discussion about the optimum age for operation upon the tonsils and adenoids. Many authorities prefer to postpone operation until the third year of life at least, while others defer even longer on the basis that the tonsil in early life performs an important function in the lymphatic system of the body. Pottenger[9] believes that moderate infection of the tonsil aids in developing a specific cellular defense against bacteria. L. Davis[10] considers that early operation may give mechanical relief but that the original cause, whatever it may be, is still present and active until a much later period.

We may conclude that the optimum age for tonsillectomy cannot be stated as a mere matter of years but that the best time to remove tonsils is when definite disease is present and before the results of such disease have caused serious injury elsewhere in the body. It is also important to remember that whatever the function of the tonsil may be, it cannot be performed through the medium of diseased structure.

Indications for Operation: Attempts to classify the size of tonsils are difficult owing to the factor of personal equation. In studying 588 of our cases, the tonsils were found to be small and more or less buried in 13.1 per cent; moderately hypertrophied in 74.8 per cent, and greatly hypertrophied in 12.1 per cent.

In 575 of our cases the tonsils were noticeably cryptic in 92.9 per cent. No other definite data as to the size and condition of tonsils are available, although several authors consider that mechanical obstruction due to size is a definite indication for operation. Heiman[11] points out that careful differentiation should be made between tonsillar hypertrophy and peritonsillar conditions which push the tonsils out of place.

In 9.5 per cent of our cases mere tonsillar hypertrophy was stated to be the chief indication for operation. S. Cohen[12] considers that one attack of peritonsillar abscess offers a definite indication for operation.

In the preparation of the figures in this and succeeding paragraphs dealing with indications for operation, we have abstracted the articles of Simpson,[13] Blauner and Orgle,[14] Kaiser,[15] and St. Lawrence.[16] In addition we have added our own figures. All of these can be found in Tables I and II.

Mouth Breathing and Snoring: Sixty-nine per cent of all the patients presented for operation were mouth breathers, and in 18.7 per cent of our own cases the child was referred for operation on that account. Snoring is not properly a symptom of hypertrophied tonsils, but was stated to be present in 76.9 per cent of our cases. In only 1.1 per cent was the child referred for operation on account of this.

Sore-Throat: The term "sore-throat," as used by the laity, necessarily must imply some inflammatory involvement of the tonsils if these be present. One would expect, therefore, to find a history of sore-throat in a large majority of patients who present themselves for tonsillectomy. As a matter of fact in only 58.6 per cent of all the cases studied had sore-throat been a noticeable feature, and in only 22 per cent of our cases was it the chief indication for operation. The reason for the comparatively low percentage of positive histories may lie in the fact that tonsillar infection often is found on examination when symptoms would not point to its presence. This is especially true in younger children.

Cold in the Head: It is remarkable how often cold in the head is noted in the history and given as a chief indication for operation. While rhinitis may in some cases be due to hypertrophied and diseased adenoids, there is no logical reason to expect that it would be dependent upon disease of the tonsil *per se*. In 51 per cent of all the cases there was a history of frequent colds, while in 41.5 per cent of our cases the child was brought for operation on account of colds.

Cough: In eliciting a history it is very difficult to distinguish between patients who are subject to colds in the head and those who are especially liable to cough, since bronchitis is so often merely a secondary stage of an ordinary coryza. Including those patients in whom cough originated *de novo* and those in whom it was especially persistent, we found that 52.9 per cent of our cases fell into this category, whereas in only 4.1 per cent was the occurrence of cough the chief indication for operation.

Lymph Nodes: Since drainage to the cervical lymph nodes is inevitable whenever an infection passes the lymphatic barrier of the tonsils one would expect that a large majority of children coming to operation would present enlarged cervical lymph nodes. Only 46.3 per cent of all the cases gave a history, or actually suffered from, definite enlargement of the cervical nodes, and in only 5.8 per cent of our cases did cervical adenitis furnish the chief cause for operation. This comparatively low percentage would indicate either that many of the cases did not suffer from serious tonsillar infection or that there is a marked difference of opinion as to what constitutes cervical adenitis. With regard to interpretation, for example, St. Lawrence[16] found the tonsillar lymph node palpable in all of his cases, while only 61.6 per cent of our cases were considered to have definite enlargement.

NUTRITION: Since the wide prevalence of malnutrition has been recognized, all possible causes for it have been sought and chronic tonsillar infection has been inculpated quite frequently. Until a satisfactory basis of estimating nutrition has been determined, one cannot interpret too literally some of the standards at present in use. Kaiser,[15] the only one besides ourselves who has studied the nutrition of children previous to tonsillectomy according to Emerson's weight to height tables, has found the following:

5,000 SCHOOL CHILDREN

10% or more overweight	Normal	7% or more underweight
704 (15%)	2,304 (46%)	1,992 (39%)

Our own cases may be divided into two groups, preschool (1 to 6 years) and school (6 to 12 years) and are shown in the following tables:

180 PRESCHOOL CHILDREN

10% or more overweight	Normal	7% or more underweight
18 (10.0%)	80 (49.4%)	73 (40.6%)
	418 SCHOOL CHILDREN	
26 (6.2%)	169 (40.5%)	233 (53.3%)

In a recent book on "Nutrition and Growth," Emerson[17] publishes a large number of statistics on the percentage of malnutrition in children in various sections of this country and Canada. If these statistics are analyzed, it can be seen that an average group of cases studied anywhere will show about the same percentage of malnutrition as does Kaiser's group; that is to say that about 39 per cent of children will be 7 per cent or more underweight. We expect that subsequent study will explain the high percentage of malnutrition in our group of school children.

Croup: We attempted to discover how many of our cases had suffered from croup. We found that it was impossible for the laity to differentiate always between true croup and a croupy type of cough. In 23.3 per cent of our cases, however, the history showed a tendency to croup or laryngitis. In only 0.6 per cent was it the chief indication for operation.

Ear Disease: While hypertrophy or disease of the faucial tonsil has nothing to do *per se* with disease in the middle ear, the invariably accompanying enlargement or infection of the pharyngeal tonsils certainly has. It is, therefore, pertinent to include statistics on the occurrence of ear disease in children who are about to have their tonsils removed. In a total of 6,304 patients, 21.6 per cent either were suffering from ear disease or gave a history of it. In 6.1 per cent of our cases it was the chief indication for operation. Under the term "ear disease" we include suppurative otitis (with or without mastoid involvement) ear ache or deafness.

Growing Pains (myositis, bone and joint pains): Combining the figures of Kaiser[15] and the authors we have found that 4.4 per cent gave a history of growing pains. In 72.1 per cent of the cases reported by St. Lawrence[16] growing pains had been present. These cases were, however, a group attending a cardiac clinic and were referred as potential heart cases. They were utilized by St. Lawrence in his study on the effects of tonsillectomy. This furnishes additional evidence of the relationship between growing pains and rheumatism.

Arthritis (rheumatism): In 3.16 per cent of our cases, a definite history of arthritis was obtained and in 0.6 per cent of these cases it was the chief indication for operation. Fifty-one per cent of St. Lawrence's selected group of 94 cases had suffered from acute rheumatic fever prior to operation.

Chorea: Chorea occurred in only 1.2 per cent of the cases studied by Blauner and Orgel[14] and the authors, whereas 43.6 per cent of St. Lawrence's group had suffered from it. The disproportion in these figures, as in those of growing pains and arthritis, emphasizes the importance of these conditions in the development of heart disease:

Organic Heart Disease: In 2.7 per cent of the cases of Blauner and Orgel and the authors, organic heart disease (chronic endocarditis) was present at the time of preoperative examination, whereas it was found in 61.7 per cent of St. Lawrence's case (58 of 94 cases). This large proportion, of course, has no special significance with regard to the general incidence of heart disease. Norris[19] found that of 16,120 children admitted to 3 hospitals, 1.4 per cent suffered from cardiac disease. Of 52,281 children admitted to various German hospitals, the incidence of chronic valvular disease was 0.17 per cent (Dusch).[20] In the past four years there have been 56 admissions to the wards of the Children's Hospital of children over one year of age with acute or chronic endocarditis, out of a total of 1,177 cases, or 4.1 per cent. This proportion is 50 per cent higher than was found in the tonsil group.

Some authors advocate the removal of tonsils at the very beginning of an acute endocarditis,[18] and it is becoming almost a routine procedure to perform tonsillectomy in chronic endocarditis, usually after compensation has become established. We hope to be able to throw some light upon the value of this in a subsequent study.

While it bears no relation to the indications for tonsillectomy, it is interesting to note that 25.8 per cent of our cases showed the presence of definite so-called functional murmurs.

Asthma: Certainly in the past tonsils have been removed with the idea of curing or relieving asthma. Since the relationship between protein sensitization and asthma has been determined, less emphasis has been placed on the value of tonsillectomy. In only 2 of 652 of our cases was asthma the chief indication for operation. In 4 of Blauner and Orgel's 100 cases, asthma was present as the cause for removal. These authors were not prepared to include asthma in a list of operative indications.

Nephritis: Much work has been done lately in regard to infection of the kidney from the organisms derived from foci in the tonsils, and it has been suggested that the toxins originating from focal infection in the tonsils may be the cause of generalized nephritis. Quite recently Cautley[21] calls attention to cases of albuminuria with red cells and casts. Some of these are so mild as to raise the question as to whether or not true nephritis is present; others probably are instances of localized infection in the kidney, while a few lead to a severe generalized nephritis. He believes that they are undoubtedly the result of focal tonsillar infection. In general he advises to wait until blood has disappeared from the urine before doing a tonsillectomy, although he is prepared to admit that some of the severe types might be better for an immediate operation. In only 1 of our 677 cases was nephritis present at the time of operation. Incidentally, no benefit was derived from the operation in this case and the child died of nephritis 3 weeks later.

Impaired Speech: Difficulties of speech, including stammering, stuttering and imperfect enunciation, have long been recognized as an indication for removal of hypertrophied tonsils.

In 4.6 per cent of our cases speech defects were the chief indication for operation.

Enuresis: Simpson[13] who studied 571 cases in a boys' institution found that 8 per cent suffered from enuresis. Unfortunately we made no inquiry as to the occurrence of this symptom, although in 1 of 652 of our cases it constituted the chief indication for operation.

Sleep: We did not collect statistics as to the occurrence of night terrors or disturbed sleep, although in 3 of 652 of our cases this was the chief indication for operation. Unless the tonsils are greatly hypertrophied, it is probable that the adenoids are the sole cause of such symptoms.

Mentality: As is the case with disturbed sleep, mental retardation due to lymphatic hypertrophy in the nasopharynx is more apt to be related to adenoid overgrowth than to hypertrophy of the faucial tonsils *per se*. Aprosexia or inability to fix attention may also be mentioned in this connection. In 0.75 per cent of our cases tonsillectomy was performed chiefly on account of such mental defects.

Headache: It is conceivable that headache may be due to defective aëration from blocking of the nasopharynx or toxic absorption from infected tonsils, but involvement of the sinuses should be carefully excluded before inculpating the tonsils. In 3 of 652 of our cases, sinus involvement having been excluded, headache was given as the chief indication for operation.

Miscellaneous Indications for Operation: Although statistics were not obtained as to the general incidence of the following conditions in our cases, the patients were referred for operation on account of them.

Bad teeth, 2 cases; and 1 each of the following: tuberculosis of the tonsils, dysphagia, bleeding from the throat, bleeding from the nose, colitis, convulsions and wry neck. In addition to various indications for operation mentioned in this article, C. J. Swan,[22] as the result of a questionnaire, sent to 100 pediatrists and 100 laryngologists, gives the following indications: Frequent gastro-intestinal disturbance; cyclic vomiting; sinusitis; certain chest and face deformities; peritonsillar abscess and neoplasm of the tonsils.

It is a little difficult to establish the importance of these alleged indications. Bleeding from the nose and throat obviously may be due to diseased adenoids and tonsils. Convulsions in a predisposed child may be due to toxemia of tonsillar origin. Colitis and frequent gastro-intestinal disturbances may likewise depend upon direct infection from the tonsil. Cyclic vomiting has been ascribed to so many causes, that it is not surprising to see it mentioned in a list of indications for tonsillectomy. Of more definite importance is the morning gagging and vomiting induced by accumulated postnasal secretion and by the mechanical irritation of hypertrophied tonsils which occurs in certain neurotic children. Sinusitis is more apt to depend upon coincident infection of the adenoids than the tonsils, while chest and face deformities probably depend also upon rickets as a basis. Neoplasms certainly are extremely rare in childhood. No instance of peritonsillar abscess occurred in any of our cases.

While these rare conditions, therefore, occasionally may prove to be an indication for tonsillectomy, their rarity is noteworthy in view of the common occurrence of tonsillar infections.

A few other indications remain to be discussed. Among 428 or 8.5 per cent of Kaiser's 5,000 cases there had been frequent attacks of fever before operation, presumably without recognized cause. In our experience these febrile attacks occur occasionally but are accompanied by evidence of inflammation of the tonsils in the majority of cases, so that they would fall into the group of tonsillar infections.

Diphtheria and Scarlet Fever: The value of tonsillectomy in the eradication of diphtheria carriers has long been recognized. We have attempted to get some evidence as to whether diseased tonsils predisposed to infections such as diphtheria and scarlet fever. Among 421 of our cases, 6.15 per cent had had diphtheria, and 4 per cent had had scarlet fever. For comparison we examined the histories of patients over one year of age admitted to the medical ward of the Children's Hospital, Philadelphia, for the past four years. Among 1,074 patients, 2.1 per cent had had diphtheria and 2 per cent had had scarlet fever. Of course, many of these patients admitted routinely to the medical service, had diseased tonsils, but presumably not 100 per cent, as in the tonsil group. The difference in incidence of diphtheria and scarlet fever, therefore, suggests, while it does not prove, that diseased tonsils favor the development of these infections.

COMMENT

It is impossible to draw definite conclusions from an article of this type. Certain facts are evident. The tonsils normally contain pathogenic bacteria and the anatomic features are such that both bacteria and toxins can traverse the tonsils and gain the general and lymphatic circulations. The most common symptoms, in the order of frequency, which occur in patients who are brought to a children's throat clinic for operation, are as follows:

Snoring, mouth-breathing, sore-throat, colds, cough, enlarged cervical nodes, functional heart murmurs, croup, ear disease. (Each occurs in 20% or more of cases). Much less common symptoms, occurring in 4.4 per cent or less, are growing pains, arthritis, heart disease and chorea. The symptoms for which patients are referred for operation show different percentages and a wider range. The most frequent of these are colds (41.5 per cent), sore-throat (22 per cent), mouth breathing (18.7 per cent), tonsillar hypertrophy (9.5 per cent), ear disease (6.1 per cent), enlarged cervical nodes (5.8 per cent), and impaired speech (4.6 per cent).

The prevalence of undernutrition in a hospital clientele can be additionally affirmed from the result of our studies.

TABLE I

Combined figures including authors'.

Symptoms present on examination before operation.

Symptoms	No. of cases presenting such symptoms	Total number of cases	Percentage of positives
Mouth breathing	4,361	6,303	69.1
Sore-throat	3,693	6,300	58.6
Frequent colds	2,956	5,753	51.
Enlarged lymph nodes .	2,588	5,591	46.2
Ear disease	1,362	6,304	21.6
Growing pains	244	5,502	4.4
Heart disease*	18	672	2.7
Chorea*	9	722	1.2

*Blauner and Orgel and authors', only.

TABLE II

Authors' figures only.

Symptoms present on examination before operation.

Symptoms	No. of cases presenting such symptoms	Total number of cases	Percentage of positives
Frequent colds	592	653	90.7
Mouth breathing	535	632	84.7
Sore-throat	413	535	77.2
Snoring	486	632	76.9
Bronchitis and cough .	400	636	62.9
Enlarged lymph nodes .	306	497	61.6
Ear disease	174	633	27.5
Croup	167	611	27.3
Functional murmurs ..	147	572	25.8
Growing pains	44	502	8.76
Arthritis	19	633	3.16
Heart disease	18	672	2.67
Chorea	8	622	1.2

TABLE III

Symptoms given as chief indication for operation in 652 cases (authors').

Symptoms	No. of cases presenting such symptoms	Percentage of positives
Tonsillar hypertrophy	62	9.5
Mouth breathing	122	18.7
Snoring	7	1.1
Sore-throat	144	22.
Frequent colds	272	41.5
Bronchitis and cough	27	4.1
Enlarged lymph nodes	38	5.8
Croup	4	.6
Ear disease	40	6.1
Arthritis	4	.6
Impaired speech	30	4.6
Night terrors	3	.45
Mental retardation	5	.75
Headache	3	.45
Asthma	2	.3
Bad teeth	2	.3

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DISCUSSION

Dr. Myer Solis Cohen (Philadelphia, Pa.): The writers of this paper are to be congratulated on the very splendid study they have made. This is a very important subject, but I think a very hazy one for all of us. We really should take a broad view of this question and possibly then we will get at some conclusions.

The point of the matter is that focal infection of the upper respiratory tract is the cause of many disorders in children. By that we mean that many children have in their upper respiratory tract microörganisms against which they have no bactericidal power, and that these organisms or their toxins go to other parts of the body and cause disease of other organs or other structures. When in a case of focal infection we see a diseased tonsil, we imagine that the tonsil is the source of the infection. That is not always the case. The same organisms that are present in the diseased tonsil may frequently be found in the rhinopharynx also. But these same organisms may be found in tonsils that are normal as well as in those that are diseased. Everybody, no matter how normal, will have a certain number of organisms in his mouth or nose or in any part that is exposed to the atmosphere; and, just as the writers of the paper said, the presence of bacteria in a tonsil does not indicate pathogenicity, especially for the individual harboring them. We must recognize the immunologic properties of the body. Some of us have good resistance, bactericidal power, against certain organisms; others have resistance against other organisms.

There is a way of determining whether an organism is pathogenic for an individual. In addition to the ordinary culture you make a smear on the bottom of a sterile test tube and overlay that with the patient's fresh, whole coagulable blood. This is incubated for twenty-four hours. The only organisms that grow up are those that the blood fails to kill. The organisms that fail to grow up have been killed by the blood; the patient had bactericidal power against them.

The reader said that the removal of the tonsils and adenoids reduces the number of organisms but does not cause their disappearance. Perfectly true! It removes the organisms that are in the tonsils, but does not prevent the organisms that remain in the throat and rhinopharynx from multiplying and becoming numerous again. It does not necessarily cause the patient to acquire bactericidal power against them. Sometimes it does. Sometimes the excessive load of these organisms in the tonsils has prevented the patient from developing bactericidal power, and with the removal of that load the patient develops enough immunizing power to kill the organisms. But in many cases we have to follow tonsillectomy with a vaccine made from the offending organisms in order to restore bactericidal power against them, and then we cure the patient. That is why the mere removal of tonsils and adenoids has frequently disappointed us.

I have a number of cases with heart disease that had tonsillectomies performed, and have found in the throat and rhinopharynx organisms the patient's blood failed to kill. Such patients fail to get well until a vaccine is administered, made from these organisms. Then frequently you find recovery.

I have had the same experience as the readers of the paper in that I have found streptococcus hemolyticus or viridans in the throats of cases of endocarditis. I have also found the same organisms in the tonsil or rhinopharynx and in the urine of cases of pyelitis and nephritis. The frequent cold in the head and otitis media associated with diseased tonsils is probably an extension from the accompanying infection in the rhinopharynx, acute exacerbations occurring wherever resistance is lowered.

As regards malnutrition, these children are suffering from toxemia of course, and with toxemia you get all the evidences of malnutrition.

Dr. Clifford B. Farr (Philadelphia, Pa.): We must all agree, I think, that the chief indication for tonsillectomy is the prevention of rheumatic heart disease. If we bracket the last four items (not to speak of "sore-throat") in Dr. Mitchell's table ("growing pains," "rheumatic," "heart disease," "chorea"—in all 11%) this point will be emphasized. In the Medical Section the question was raised as to whether or not this reason alone would not justify the removal of all diseased tonsils.

I agree with Dr. Mitchell that the tonsil probably has no important function. The argument, however, that because it is diseased it therefore cannot functuate is not valid. Polycystic kidneys, showing macroscopically hardly any normal tissue, may function fairly well.

Dr. William N. Bradley (Philadelphia, Pa.): There is not much left to say about this subject. It seems to me that what should be determined is which tonsils to remove and which not to remove. I am glad Dr. Mitchell spoke as he did of the group of physicians who always start in with the statement that as we do not know the function of the tonsil we should not be in such a hurry to eradicate it. Similarly, we do not know the function of the appendix, normal or inflamed. I do not think, however, it is much good to us, and I feel the same way about an infected tonsil.

Dr. Robert K. Rewalt (Williamsport, Pa.): I should like to congratulate the gentlemen on their excellent paper. Dr. Mitchell spoke about the time for operation. I have found from experience with several nose and throat men that they are rather fearful of operating until the child is four or five years old. This I feel is a great mistake. I remember one case in particular of otitis media which failed to clear up after the adenoids alone were removed. I requested two different nose and throat men to remove the tonsils. They said the child was entirely too small; they did not care to take the operative risk. The child was one year old, and had a discharging ear that had been discharging for six months. The tonsils were removed, and the condition cleared up in eight days and never recurred again.

I feel, too, that pediatrists and general practitioners who see children are in a far better position to tell whether the tonsils should be removed than the nose and throat men. I feel that they know the history of the case extending over a period sometimes of years, and know whether or not the tonsils may be at fault in the production of certain diseases. For instance, a case that I remember quite well was that of a child eight years old, for whom I advised removal of tonsils. The nose and throat man to whom I referred her said he did not think the tonsils were diseased at all. But this child had several attacks of arthritis and the ears and teeth were negative. A throat culture showed very little, but after the removal of the tonsils the condition cleared up. This was about five years ago; the child has had no recurrence of the arthritic condition.

Dr. Joseph B. Feeley (McKeesport, Pa.): I am going to congratulate Dr. Mitchell on one point which he brought out which to me needs a whole lot of attention, that is in regard to indiscriminate tonsillectomy. I do not think it is right just because the tonsil is a little enlarged, and to all appearances and all purposes is a normal tonsil. I do not agree with nose and throat men that this tonsil needs to be taken out. I do not think it is right. I do believe in taking out diseased tonsils, whether they are little, big, or medium sized, but I do not approve of indiscriminate tonsillectomy; I do not think it is a good thing.

Dr. Gittings (in closing): It seems to be very difficult to draw thoroughly satisfactory conclusions until we can get statistics in large numbers over long periods of time. The matter which Dr. Cohen has touched upon has always interested me very much, namely, the immunity some individuals possess to certain pathogenic germs. What we need to know is the life history of many children who have had their tonsils removed at an early age. This, of course, is going to be difficult to accomplish, because the hospital type of patient rather quickly passes from observation, so that it is impossible to continue one's observation over long periods of time. General practitioners who follow cases often for the better part of a lifetime could accumulate a vast amount of interesting data if they would take the trouble to do so.

Dr. Mitchell (in closing): I have little to add to Dr. Gittings' discussion. It does seem that the indications for tonsillectomy is a timely subject from the point of view of the man who has to deal with children. The type of study we planned we believe to be more valuable than merely taking statistics from the indications given by the individual who brings the child to the hospital. The thing that seems to us to make this study important is the fact that many children whom we see after the tonsils have been taken out persist in having their symptoms.

In regard to the function of the tonsils, we really meant to say very little about that. It seems to me that there is little comparison between the kidneys and the tonsils. There are two of each, of course; otherwise I do not see the comparison. In the first place, we know very definitely the function of the kidney, and while it would be nice to be without them at times, they are very necessary. Certainly, we can get along without the tonsils, especially if they are diseased.

AMBULATORY TREATMENT OF GASTRIC ULCER*

MARTIN E. REHFUSS, M.D.

PHILADELPHIA, PA.

Several years ago my attention was attracted to the subject of the ambulatory treatment of ulcer of the stomach and duodenum by the following series of observations:

It is my custom never to make a diagnosis of chronic ulcer without visualizing that condition roentgenographically. In practically every instance where it was possible and the diagnosis of ulcer seemed justifiable, I placed the patient flat in bed on his back and put him through the routine treatment which in my experience was best suited to the treatment of ulceration. Uncomplicated ulceration was usually followed by rather rapid disappearance of subjective symptoms in the first week, and occult blood usually disappeared from the stools in from seven to eight days. The rest of the treatment was routine and calculated to produce healing of the lesion. In almost every instance a symptomatic cure resulted to which to all intents the patients subscribed, but one method of examination demonstrated clearly that in many instances there was still a definite evidence of the lesion by x-ray examination. This radiological evidence, therefore, suggested that possibly the ulcer was not cured, but that the lesion had simply reached its latent state where, under the influence of dietetic indiscretions, infections, tobacco and so forth, it would flare up again. I have had many such cases in the course of the last eight years, and during that period it has been my privilege to examine them repeatedly.

Before going further I want, however, to say that the question naturally arises as to the value of the x-ray in depicting an ulcer. In other words, are we able by modern x-ray technique definitely to diagnose an ulcer of the stomach. Charles Mayo told me that Carman diagnosed 96 per cent of duodenal ulcers correctly by this method and another member of the Mayo staff told me the percentage was 98. If, then, this is the case, and this radiologist is able, without the suggestive evidence of the history, the gastric and the fecal examinations, to diagnose ulceration correctly, it must follow that the diagnosis of peptic ulcer is entirely probable by careful x-ray examination, and this, coupled with other methods which the clinician possesses, should be overwhelmingly correct. In the diagnosis of ulcer of the duodenum, it is now possible to delimit the duodenum accurately, and furthermore by flash photography and double screens to obtain photographs which will support that assumption.

There are only three other conditions which resemble ulcer of the duodenum under the screen: one is spasm, that bugbear of gastro-intestinal radiology; the second is adhesion formation to the gall-bladder; and the third is duodenal diverticulitis. Carcinoma practically never enters into the diagnosis. Ulcer is usually clean cut or may be so excessive as to produce irregular canalization, the clover leaf cap, etc. Gall-bladder adhesion may grossly deform but nearly always fixes the cap; furthermore, it is nearly always diffuse, irregular, and confined to one border. Diverticulitis gives an altogether different and rather characteristic picture. Diffuse pericholecystitis with periduodenal adhesions will usually change the course of the first and part of the second part of the duodenum and fix it. Ulcer in the duodenum will rarely do this beyond the beginning of the first portion unless very extensive.

More difficult, and often impossible to answer, is the question as to the stage and pathological condition of ulceration as exemplified on the screen. I have repeatedly seen an ulcer flatten out under treatment, and I have seen the ulcer niche totally disappear in the stomach. On the other hand, I have seen a persistent defect which at operation revealed healed ulceration. Therefore, I can only say that an ulceration or disappearance of the defect is a definite indicator in ulcer healing, while lack of change in the defect does not necessarily indicate ulcer activity.

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Bearing these points in mind, I unhesitatingly say that careful roentgenological study will show that complete rest in bed for three or four weeks, with the modified Sippy treatment, will result, with duodenal ulcer, in many cases, in little or no change in the defect, even though all symptomatic or clinical investigations are absolutely negative and the patient is apparently well. With ulcer of the stomach, on the other hand, the rest period is usually more effective and in my experience the niche often shows rapid and very distinct changes. *Therefore the point of importance which has impressed me is the fact that to produce healing of chronic round ulcer a period longer than that commonly employed for medical ulcer treatment is necessary, and that period can only be satisfactorily carried out by ambulatory treatment.* I firmly believe that there are many ulcers which will not heal in one month that will heal in three months, and I also firmly believe that many ulcers require six months or more of active ambulatory treatment before one can be convinced that actual healing has taken place. In the last few years I have treated more than one hundred cases in which all evidence pointed to active ulcer of the duodenum, with typical history, occult blood in the stools, gastric findings I will enumerate later, and a definite characteristic defect in the duodenum, with but one accident, and to my knowledge not a single case of perforation or acute phenomena. I hesitate to make this assertion in view of the fact that some of these cases are entirely out of my hands and the attending physician is managing the case, but I believe it to be correct.

I not only believe in the ambulatory treatment of peptic ulcer because I am convinced that complete healing requires a longer time than any feasible rest period hitherto devised, but I believe in ambulatory treatment because it is possible to carry out all the fundamental considerations of the rest treatment with the exception of the physiological rest obtained. As we see it today, we have no specific etiology for peptic ulcer. Whether we subscribe to the circulatory, nervous, autonomic, or bacteriological theories of ulcer formation, there is nothing in the modern treatment which is specifically directed toward these phenomena. We can only say that peptic ulcer is an area of cell devitalization resulting in digestion of the mucosa. Whether bacteria, or chemical and metabotoxins, or foods, or some systemic fault is responsible, we can only surmise and conjecture, not surely insist. Furthermore, regarding the active acid gastric secretion, we are almost to a unit in favor of attributing to it only a secondary rôle, and not the primary rôle. The primary *"point du départ"* is the thing, whatever it be, which impairs the gastric cell. Once impaired, the gastric juice does the rest; therefore, all efforts at restitution aim at impairing the power of the gastric juice.

To-day we know that the gastric juice is something more than the local contribution of the gastric glands. It is certainly concerned with body economy as well as the inorganic chemistry of the body. Bennett and Dodds have shown clearly the changes in alveolar CO_2 with the appearance of the gastric secretion. In some way by automatic regulation the pancreas is intimately concerned. In other ways the hematopoietic system is complicated with either leukocytosis or leukopenia from hemoclastic shock, such as is seen in liver disease, and there must be much more that we do not know.

It therefore follows that the two great methods for controlling ulcer have one point in common: they both attempt to reduce the free acidity. Gastro-enterostomy is purely a mechanical procedure, followed, when properly functioning, by a marked reduction in free acidity and a lessening of the digestive phase. An unsuccessful gastro-enterostomy is one in which that point has not been accomplished, and a high gastric acidity after operation is too often an indication of poor stoma function and presages not only improper healing, but the likelihood of jejunal ulcer formation. Medical treatment aims to do the same thing. It attempts to cripple digestive power of the gastric juice by a rearrangement of the dietary to lessen the duration of food in the stomach, and by the administration of sedatives and atropin or belladonna to lessen reflex activity and mucosal function.

Many methods have been suggested for the medical treatment of ulcer. Some clinicians have insisted on complete starvation over varying periods. Depending on the type of ulcer, this may be altogether desirable, and if there have been recent complications, such as hemorrhage, this is altogether desirable. *It simply enormously prolongs the interdigestive or rest phase.* The stomach always has secretion in it, but the functional activity of the interdigestive secretion is but one-half that of the digestive secretion on the average and the approximation of the gastric walls is conducive to ulcer healing. On the other hand the moment any food is introduced into the stomach, there is the appearance of secretion. It only becomes a question of which foods are the most harmful and which possess the least power of harm.

The use of permanent intubation into the duodenum never appealed to me, nor have I seen results which could not be equaled by less drastic measures. Furthermore, Garbat's recent experiments show clearly that the introduction of food into the duodenum is followed rapidly by the appearance of a strongly acid gastric juice in the stomach. I have verified his experiments several times last year in a woman who had a carcinoma of the breast removed, and it was thought that the sharp niche and hour-glass were evidence of malignancy. I did not think it was malignant because the niche was long and narrow rather than broad and flat. She made an uneventful recovery, and when last seen was absolutely free from any defect. Another case which I saw in a young man, and which Dr. Pfahler also saw, was an extensive niche of the lesser curvature. Dr. Einhorn put him at rest, with neutralization, and almost every sign has disappeared.

Ulcers of the duodenum are usually more difficult when near the pylorus, showing that such ulcers are usually pyloric ulcers, and such has been my experience.

Form of the Ulceration: The form of the ulceration is most important. An ulcer crater larger than a ten-cent piece in the stomach is liable to be malignant, and when the size of a twenty-five-cent piece, is nearly always malignant. Ulcer of the duodenum is more deforming, and when viewed anteroposteriorly may involve one side of the duodenum or both. More often, and typically it deforms both. Usually the more extensive the ulceration, the more irregular the canalization, the more likely there are to be gastric obstructive symptoms. During acute exacerbations there may be temporary gastric enlargement with marked retention. The average case of duodenal ulcer shows but little obstruction and rarely much retention.

Is there food retention, hypersecretion, in the fasting stomach in the morning? This may be pronounced in acute exacerbations, and on the other hand, may be due to either a chronic stenosis or pylorospasm, the latter being readily relieved, while the former is persistent. In so many cases, however, moderate obstruction or delay is accentuated by spasm or periulcerous edema that one can never say definitely until the condition is put to a test. In every case of retention daily lavage must be instituted, with medical treatment until retention disappears. If it fails to disappear, then there is every reason to believe that we are dealing with organic stenosis demanding operation.

In view of the lack of our knowledge regarding the specificity of ulcer, every possible condition must be corrected. Focal infections, intestinal regulation, anemias, cardiorenal disturbances, all may need attention. In two cases under my care puncture of an antrum and in another the removal of the appendix produced marked changes, while most individuals need some attention to the nose and throat.

The next point is to classify the cases. I will enumerate them as follows:

FRANKLY SURGICAL

1. Malignant degeneration, characterized by large crater, intragastric findings indicative of malignancy, persistent unremitting occult blood in spite of treatment, an increase rather than a decrease of deformity, and particularly when a gastric deformity on the screen tends to encroach upon rather than be added to the gastric image.
2. Persistent obstruction with fasting stomach, retention in spite of lavage, antispasmodics, and other measures to allay obstruction. Fixed and persistent obstruction is one of the most definite indications for operation.
3. Perigastritis with definite evidence of fixation of the gastric, or first part of the duodenum, with immobility on palpation. This variety shows no subjective relief on treatment.
4. Persistent uncontrollable hemorrhage.
5. Healing with deformity and inducing mechanical delay, a condition which occurs more frequently than is believed.
6. Failure of the deformity either to modify itself or to disappear after a reasonable interval of medical treatment.
7. Gastric ulcer after the age of forty which fails to respond satisfactorily to medical treatment in three weeks to a month.
8. Associated chronic inflammatory focus in the abdomen.

MEDICAL CASES

1. Those in which the patient has had the characteristic history and findings mentioned above, with deformity suggestive of duodenal or gastric ulcer, but before the association of chronic inflammatory foci in the abdomen such as appendicitis or cholecystitis.

2. Those in which there has been hemorrhage, in which case ambulatory treatment must be preceded by a reasonable period of complete rest for at least two weeks after all traces of occult blood have disappeared from the movements.

3. Cases with acute hypersecretory crises or acute retention. These are by no means necessarily surgical.

4. Cases where there are remissions of symptoms.

My rule is as follows, granting that the case is medical: The patient has his survey of nose, throat, teeth and possible accessible foci of infection. If he has had a recent hemorrhage or has hemorrhage, he goes to bed and remains there for two weeks after the cessation of all bleeding.

We cannot find ourselves in outspoken support of any one form of ulcer treatment. We believe that the active formation of ulcer has its inception in something altogether apart from the gastric juice, something which, in the absence of concrete data, we may place in the category of substances affecting gastric cell viability. On the other hand, there is an abundance of clinical and experimental data to indicate that the gastric secretion has much and probably most to do with the continued chronicity of the case.

Moynihan, in a recent communication, studied the chemistry of proved cases of peptic ulcer and was the first to suggest definitely that the chemistry of gastric ulcer was different from that of duodenal ulcer. In 39 cases of proven gastric ulcer submitted to complete fractional analysis only 20.9 per cent showed high acidities, while in 71 cases of duodenal ulcer proved at operation 72.7 per cent showed high acidities. In a communication several years ago on a group of proved ulcers, I pointed out that the incidence of high acidity in gastric ulcer was only 40 per cent roughly, approximately the average normal number of high acid-formers ordinarily encountered. In this last series, representing 100 cases in which I have diagnosed duodenal ulcer by characteristic defect, ulcer history, occult blood in the stools, and submitted to the type of treatment which I am about to describe, I found 69.9 per cent, or practically 70 per cent, with an acidity over seventy, and for the entire series of ulcer of the duodenum, an average total acidity for the Ewald meal of 79.6 for the entire series. The average free acidity was 55 with 21 per cent showing a total acidity over 100 at some phase of digestion, and 66 per cent showing a free acid over 40. This was perceptibly more than the acid findings in gastric ulcer, and suggests that in some way ulcer of the duodenum is intimately associated with a disturbance of the acid mechanism. Recent studies by Garbat show that the introduction of food into the duodenum is followed by an outpouring of gastric secretion, a point which I have twice confirmed in the last month. Moynihan's figures, agreeing as they do with those I have collected, would support his contention that ulcer of the duodenum is chemically and in other ways different from gastric ulcer. There is much that I could say regarding some of the characteristic responses of ulcer, but my province to-day is to discuss treatment.

Granting then, that we have made a differentiation of our case, what is the next step? With hemorrhage and hypersecretory crises, they must be put flat on their backs in bed under the most rigid dietetic and medicinal treatment. There is no change in this method over the time-honored methods which we have adopted except that in acute hypersecretory crises most frequently seen with duodenal ulcer, complete gastric evacuation and lavage is a routine procedure. On the other hand the chronic dyspeptic or the individual who has intervals of complete freedom coupled with attacks—what are we to do with him? If he is having acute distress and discomfort, I put him to bed and carry out the first period of starvation and rectal feeding, and the second period of complete milk feeding and neutralization in bed. I have been unable to satisfy myself that there is any real advantage in milk and cream, and I simply use peptonized milk every two hours with neutralization powders at alternate hours, beginning with feedings of four, then six and eight hours. This procedure is kept up until the patient is symptom free and his stools are occult blood free. If the latter condition does not take place in seven or eight days, I look into the possibility of malignancy, an old calloused ulcer, and if pain is not completely relieved, I immediately think of some chronic inflammatory focus in the abdomen. These patients receive sedatives, belladonna, enemas, rubs, and all those procedures which are the recognized technique of ulcer treatment in bed.

DIET

The patient is to follow these instructions as closely as possible, trying to arrange the feeding intervals and the neutralization periods as nearly as possible on the hour. The schedule calls for the use of peptonized milk during this period. This is prepared by means of the so-called Fairchild's peptonizing powders and can be prepared in bulk in the morning according to the directions found in the package. The schedule is as follows:

8 o'clock: Peptonized milk.
9 o'clock: Powder A.
10 o'clock: Peptonized milk.
11 o'clock: Powder B.
12 o'clock: Peptonized milk.
1 o'clock: Powder A.
2 o'clock: Peptonized milk.
3 o'clock: Powder B.
4 o'clock: Peptonized milk.
5 o'clock: Powder A.
6 o'clock: Peptonized milk.
7 o'clock: Powder B.
8 o'clock: Peptonized milk.
9 o'clock: Powder A.

The following are important rules:

(1) For the first two days use 6 ounces of peptonized milk to each feeding.
(2) After this period use 8 ounces of peptonized milk.
(3) If the bowels do not move, unless otherwise specified, use a simple enema of plain water or an enema of a pint of warm water with a teaspoonful of salt.

The next step is the first one for the ambulatory case. It is the procedure that I carry out first with the ordinary chronic dyspeptic who has a long history and no acute symptoms: Meals and feedings spaced at two and one-half hour intervals as follows (In our experience the average total acidity of vegetables and cereals was 70, of eggs 80, and of meats and fish 90-130):

DIET

This diet should be followed as closely as possible both as to the nature of the meal and the time of administration, as well as the time in which medication is followed.

8 o'clock: Mashed prunes passed through a colander, cornstarch, cream of wheat, farina, hominy or oatmeal (in a double boiler 1½-3 hours).
1-2 soft boiled eggs.
Toast, butter. Milk, Kaffee Hag.
10:30: Glass of fresh raw milk with one tablespoonful of lime water or one saltspoonful of citrate.
1 o'clock: Cream soups or purees of peas, beans, vegetables, mashed and strained.
Steamed or boiled rice, macaroni or spaghetti with butter, mashed potatoes, asparagus tips, spinach if finely done, peas in puree form, beans in puree form, carrots and turnips in puree form; no cauliflower, onions, cabbage or tomatoes.
Desserts: Gelatine preparations, puddings—rice, tapioca, bread, —, custards, stewed fruits only if passed through a colander.
Toast. Butter.
3:30: Glass of fresh milk with one tablespoonful of lime water or one saltspoonful of citrate of soda.
6 o'clock: Sot boiled eggs or oyster stew or clam broth, omelet or cottage cheese.
Vegetables as at luncheon.
Desserts as at luncheon.
Toast. Butter.
8 o'clock: Before retiring a glass of malted milk or milk with lime water or citrate of soda.

Medication is to be taken before the three important meals and the *neutralizing* powders are to be taken *one hour after every feeding.*

Medical treatment consists of ten grains of strontium bromid and 5 drops of tincture of belladonna or hyoscyamus three times a day before the important meals. Lockwood and Chamberlin (Archiv. Int. Med., 32:74, July 15, 1923) find the average total and free acid lower with calcium carbonate and magnesium oxid, while Agasse Lafonte in the new textbook of Roger, Widal and Tessier claims advantages for kaolin over all other alkaline combinations. Formerly I used equal parts of bismuth subcarbonate, heavy oxid of magnesia, sodium bicarbonate and calcium carbonate. Recently I have added kaolin, and in some cases lactose, flavoring with small amounts of oil of peppermint and oil of cinnamon. I formerly used individual powders. Today I use stock powder, and insist that the patient take a half a teaspoonful one hour or later after every feeding. Such an arrangement is entirely possible and I have a number of patients persuing their daily work following exactly this régime. As soon as all symptoms have disappeared and stools are free from a rapid benzidin reaction, I put them on our ulcer dietary No. 3, as follows:

DIET

This system of dieting is to be followed until further notice and is the permanent type of diet to be used in this condition.

Liquid medicine.
Breakfast: Stewed mashed prunes, baked apples without the skins, stewed apples or pears if mashed, apple sauce, cream of wheat, wheatena, farina, cornstarch, oatmeal (double boiler 1½-3 hours or more) with cream and sugar.
Soft boiled or poached eggs.
Toast, butter. Honey.
Milk, Kaffee Hag.
Neutralization powder.
10:30: Milk and lime water.
Neutralization powder.
Liquid medicine.
Luncheon: Occasionally fish baked or boiled, but no salmon, mackerel, herring or shad.
Thoroughly done purees of starchy vegetables or mashed boiled vegetables, such as rice, peas, beans, potatoes, asparagus, spinach, carrots, turnips, puree of corn.
Desserts: Stewed fruits (if passed through a colander), gelatine preparations, wine jelly or chicken jelly. Puddings: Bread, rice, tapico, custards.
Toast, butter, milk.
Neutralization powder.
4:30: Milk and lime water.
Neutralization powder.
Liquid medicine.
Dinner: Sweetbreads, omelet, chicken, guinea hen, squab, very occasionally oysters.
Vegetables as at luncheon.
Desserts as at luncheon.
Before retiring a glass of malted milk or milk with lime water.
Neutralization powder.
Medication as directed.

Unless otherwise directed do not take beef products, fried foods, rich soups, pork, bacon, salted or smoked fish or meats, coarse or uncooked vegetables, celery, radishes, cabbage or salads, hot breads, pastries, raw or acid fruits, such as peaches or grapefruits, strong tea or coffee. Use salt and pepper sparingly.

This they follow indefinitely, often over several years. As soon as possible I cut out bromid and atropin, but I keep up neutralization after the important meals for years. I am entirely aware of Hardt's and Rivers' contention regarding the danger of alkalies, but I believe that I have seen the irritability, distaste for milk, drowsiness and headaches more frequently in bed patients. Any such indications are taken as emphasizing a lessening of milk and an increase in cereals, starchy vegetables, and toast and butter. As some of our friends are right that a deficiency of vitamin C is responsible for bowel manifestations, I try to have the green vegetables entered into the dietary.

In the last few years I have treated more than one hndred cases in this way. I have had only one accident, and in that case far away from home, and I am persuaded that directions were not accurately followed. It is too soon to speak of results, but it is not too soon to realize what I realize only too well, that the average chronic ulcer does not heal in a month to six weeks, and that the only hope of competing with the results of the surgeon is to carry out an ambulatory régime which shall exert its effects over a long period of time. I have seen many cases where there was an extensive defect in a month or two months, with little or no evidence of the lesion in six months. I have a number of these cases with characteristic defects, but gastric function is normal and I have every reason to believe they are safe.

16th and Spruce Sts.

DISCUSSION

Dr. John A. Lichty (Pittsburgh, Pa.): When I heard that Dr. Rehfuss was going to read a paper on the ambulatory treatment of peptic ulcer I thought probably he was going to show us how he brought the patient with an acute ulcer who may be resting his stomach, that is starving himself, into the ambulatory group. We hear much about the ambulatory treatment of ulcer and I think the impression most of us have is that the patient is going about all the time. I also thought Dr. Rehfuss might speak of the ambulatory habit of the peptic ulcer cases while walking from one physician to another!

Now, there is probably no question that a large percentage (probably 90 per cent) of peptic ulcer cases go through the first stage, that is starvation, without any treatment whatever, and arrive at the third stage, as indicated by Dr. Rehfuss, where they begin to eat. They do it unconsciously, as a matter of habit. They have the hunger pain and they naturally starve themselves, which allows the ulcer to heal and it probably heals as promptly as if they were put to bed and starved or had glucose feeding by the bowel. However, that is not medical treatment. They may have a hemorrhage while they are doing this and probably that is why we have the number of hemorrhages we do. The patient may also have a perforation while he is doing this, so no physician who is undertaking the treatment of a case of peptic ulcer would undertake to treat him by ambulatory methods entirely.

Our treatment, so far as I know, in the beginning is the same as that of Dr. Rehfuss. From there on they are ambulatory; they cannot be otherwise. There is an economic side that has to be recognized. Of course, if we could put the patient to bed just for a few hours a day for several weeks, having a nurse, and with his diet supervised, we would probably get better results and it would probably be no more expensive than a surgical operation. But we do not feel justified in doing that, for when we get them up to the third stage indicated by Dr. Rehfuss we feel that the ambulatory method is all that is necessary. We allow the second stage to be about two and a half weeks, making three and a half weeks to cover the first two stages. Perhaps we have already concluded before we reach the third stage that the case is not medical, and we are just as anxious to determine this as the sugeon is. There are cases that do not get well on medical treatment and they certainly need surgical care. They are cases in which we are mistaken in the diagnosis, and I should give the same complications Dr. Rehfuss gives. I should add certain suspected extragastric lesions, such as chronic appendicitis, gall-bladder disease, adhesions, and pelvic disease.

I agree with Dr. Rehfuss that we should keep our hands on the patient for two or three years, and you can do that without so definitely getting your hand on his purse as is sometimes suggested when follow-up treatment is attempted. If you see such patients once every month or two, if they are good patients they will get along very well. Some of them do not have the patience to go along, and those patients go to operation where other patients who are willing to follow along nicely and obediently do not have to go to the surgeon. If we have a patient who coöperates and we can take him through these phases for two or three years we feel that we are doing something for the patient that is not a hardship, for he is able to earn all the time he is following the treatment. Take a man and put him to bed for four long weeks so that he cannot earn a living for his family, and it is a calamity, but if you can keep him on his feet and let him go along earning his livelihood while he is getting well, ambulatory treatment certainly is desirable and justifiable.

Dr. J. Quincy Thomas (Norristown, Pa.): To divide the treatment of gastric ulcer into four phases, as Dr. Rehfuss has done, is very interesting, instructive and logical. The ambulatory treatment of gastric ulcer, no doubt, requires careful thought, a thorough knowledge of the physiology of the stomach and dietetic régime, including food values and their emptying time. The important question to decide is, in what phase is a gastric ulcer safe for ambulatory treatment? When the ulcer is in the third or fourth phase of Dr. Rehfuss' division, that is, after the acute symptoms have subsided and there is no bleeding or stenosis. Many ulcers do well on ambulatory treatment if managed with intelligence, and we should ever be watchful for such complications as perforations, hemorrhages, and malignancy. The medical treatment of gastric ulcer, whether ambulatory or not, has undergone few changes since the Sippy method or its modifications have been in vogue.

The surgical treatment, which includes preoperative and postoperative and surgical technique, has been developed to the highest degree of efficiency. It is amazing to see the great number of patients in our hospitals who undergo surgical treatment, compared to those who take medical treatment for gastric ulcer. A careful survey will show that no provision has been made in our hospitals for the scientific medical treatment of this condition. There is no one who is competent enough to give and carry out the various medical treatments that are in use. It has been shown that surgical treatment and technique have been developed to the highest degree of efficiency, while the medical side is entirely undeveloped. The internist is to be blamed for neglecting to develop the medical treatment of this disease. We will all agree that the surgical treatment does not give us 100% cures, but we must admit that the medical management of many cases is sometimes not entirely satisfactory, and too, that acute exacerbations under medical treatment are quite common.

The surgical treatment cannot guarantee a permanent relief of symptoms. I can safely and honestly say that it requires from three to five years to become accustomed or adjusted to a gastro-enterostomy. I am now speaking from personal experience. It is necessary to become adapted to a gastro-enterostomy, that is, in mode of living, diet and so on; it will not adapt itself to you.

We are most fortunate to have heard Dr. Rehfuss' well prepared paper, and if we as physicians would establish a more definite and scientific method in the treatment of these cases, and follow them carefully, just as a surgeon has developed his surgical technique, we will have many more cures.

Dr. Rehfuss (in closing): I think it was interesting to hear Dr. Thomas talk because he is the only man I know who can talk from first hand.

There are just two or three things that I wish to make clear and they are perfectly clear in my own mind: First, the ordinary ulcer cure does not cure ulcer. The second thing is that a symptom-free patient is not a cured patient. I have seen this so often that there is no doubt about it. The third thing is that the patient who has occult blood-free movements over a period of time is not a cured patient.

Moynihan claims that there is a chemical difference between ulcer of the stomach and doudenum. He reports about 70 per cent higher acidity in duodenal ulcer and 40 per cent in gastric ulcer. I have my own statistics regarding 100 diagnosed ulcers of the duodenum and they are about the same as his, 79.8 per cent in ulcers of the duodenum. Garbat, of New York, by putting a tube in the duodenum and another in the stomach, showed that as soon as one puts the tube into duodenum the normal gastric juice comes out. If you put in water or food of any kind you bring out the secretion. There is no doubt of that. My claim is that you cannot avoid feeding patients. We have to feed them. If you feed them anything, vegetables, meat, fruit, you immediately get acid. My point is that many of these gastric ulcer cases have to go through the first two stages, as Dr. Lichty mentioned. If you find a clean-cut evidence of gastric ulcer and the patient says he cannot go to bed, if he says it is out of the question, and you know that even if he does go to bed he will still have his lesion, even if he is on the road to recovery, you can treat that case in an ambulatory way and he will be free from symptoms in the great majority of instances. Of course you have accidents. I had one in a patient in Pittsburgh who bled to death because she had a complicating renal lesion and she would not follow instructions and carry out the treatment.

I believe with Dr. Thomas that until we have a different method of handling these cases, we cannot accomplish more until we have a plan of carrying on through life. How can we cure them in four weeks when they have had symptoms for eight years? On the gastric side you have to watch your case carefully, you must watch for malignancy. I think Dr. Clement Jones reported at the meeting of the Gastro-enterological Society that two to three per cent of cases become malignant. I, personally, have never seen an ulcer of the duodenum become malignant, and that is accepted as a rare thing. It is interesting in the cases of ulcer of the duodenum that not many show occult blood. Carcinoma shows persistent minimal bleeding while ulcer shows only intermittent bleeding.

THE MANAGEMENT OF CARCINOMA OF THE STOMACH*

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Carcinoma of the stomach offers one of the most important problems from the standpoint of diagnosis, prognosis and treatment. Much has been done to elucidate the etiology but it has been so fruitless that it may be dismissed with the statement that at the present time there is no definite evidence that it is due to prolonged irritation, either mechanical (Rhodenburg), due to embryonal remains, or to parasites. It has never been established, beyond reasonable doubt, that it is caused by ulcer, and the other theories of the causation of cancer remain only theories.

Surgeons have frequently asserted that if the diagnosis of carcinoma of the stomach could be made at a sufficiently early stage, it could be removed by operation. At the present time this statement may be disregarded, for in spite of numerous tests that have been suggested, there is not one that has been established that gives certain evidence of the existence of carcinoma in the body. The blood, the gastric contents, the Abderhalden test with carcinoma substratum, all give no definite clue. The symptomatology in the early stage is vague, if any symptoms exist; and upon vague symptoms an exploratory laparotomy seems unjustifiable, for the earliest stage of carcinoma may easily be overlooked. Moreover, in the earliest stage even the pathological diagnosis is doubtful, particularly if any inflammatory lesion exists. Nevertheless, exploration has been urged for patients over forty-five who develop gastric symptoms.

The prognosis is unfavorable. Almost all cases of carcinoma of the stomach die of the disease, and there is a reasonable doubt regarding the diagnosis of those cases of recovery that have been reported. With the exception of two cases that I shall mention later, I have seen no cases that did not die within two years of the establishment of the diagnosis. It is a disease in which, no matter what sort of a fight is waged by the physician, he must expect defeat. This is no reason to abandon effort.

The objects of treatment are: first, cure; second, prolongation of life; third, the relief or mitigation of suffering; fourth, the comfort that the patient experiences if he realizes that effort is being made.

Cure may occur in various ways. It is possible that human carcinoma may undergo retrogression, as do some of the malignant tumors of the lower animals. The evidence for this change has been studied by Rhodenburg, and he reaches the conclusion that spontaneous cure sometimes occurs. If this is true, it is surely a rare event in any advanced case. It may be common in the earliest stage, when neither the physician nor the patient has suspected the danger that has existed; but there is no evidence that this is so.

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*Read before the Section on Medicine of the Medical Society of the State of Pennsylvania, Pittsburgh Session, October 3, 1923.

The surgical removal of the growth is at the present time the treatment that apparently affords the greatest hope. It fails in the majority of cases. One of my patients with slight pyloric stenosis, but with normal gastric contents, was found to have a small tumor at the pylorus, without evidence of glandular invasion. A partial gastrectomy was performed by Dr. J. B. Carnett, and I felt, although the microscopical diagnosis was carcinoma, that nevertheless the chance of recovery was fair, yet after six months of apparent health, metastasis occurred in the skeleton. Some twenty years ago a patient was referred to me with a severe degree of pyloric stenosis. The gastric contents contained free acid. The patient was so cachectic that the surgeon, Dr. W. J. Taylor, was at first unwilling to operate, but finally consented. At the operation he found the pylorus in a dense mass of connective tissue that may have been carcinomatous or inflammatory. A gastro-enterostomy was performed, nothing removed, and the patient, when I last heard from him a year ago, was as well as a man of seventy-five could be.

A year and a half ago a woman consulted me. She had a gastric retention for a year. She was profoundly emaciated. An immediate operation was performed and the appearance was that of an irremovable carcinoma of the pylorus, with enlarged glands along the lesser curvature. She is now well nourished, active, and entirely comfortable. I feel sure that the first case was not carcinoma and the second probably was not; but they illustrate the value of operation even in cases considered hopeless. Indeed they suggest to me that extensive gastrectomies, which I have never known to be ultimately successful and often are immediately fatal, might be discontinued or less frequently performed until we know more about the factors that contribute to success.

The treatment by x-ray and radium has been disappointing. I have never had any case recover. Some years ago I suggested, and Dr. Pancoast had constructed, an apparatus that made possible the direct application of radium to the growth. This consisted of a whalebone esophageal bougie with a small hemispherical hollow silver cup on the end, small enough to pass easily through the esophagus. It was possible to direct this by fluoroscope so that the radium was applied directly over the growth. It was tried in two cases. The best that can be said is that it caused some doubtful retardation, but both patients ultimately died. I still believe that if radium is useful in these cases, this is a rational method of application and deserves further trial.

The x-ray has not yet justified our hopes. Perhaps later it will be more efficient; but at present I believe it useless and possibly harmful.

There have been many cures suggested for carcinoma. As I have read the accounts of these I have been impressed by the fact that they all possess a certain similarity. There are a few remarks upon the hopelessness of the disease, therefore the justifiability of any effort; next the theory, more or less vague, upon which the treatment is based; then the report of one or more miraculous successes; and lastly, as a rule, a most inadequate description of the treatment. We can dismiss many of these with a word: condurango, of which for a brief period much was expected; the cancroin of Adamkiewicz, punctured by Paltauf; the trypsin of Beard; mesothorium, concerning which four cases of definitely cured secondary carcinoma of the liver were reported by Bamberger the younger; the emulsion of human embryonic tissue; and various preparations derived from bacteria, dyes, sera, drugs. Often there is at least a report of clinical improvement in the cases to which they have been administered, and usually the first report is also the last. I have tried some of these. When Hodenpyle reported his cases, treated by ascitic cancer fluid, I obtained some ascitic fluid from a case of carcinoma of the peritoneum, and after careful bacteriological tests, employed it in a case of recurrence after pylorectomy. The subjective improvement was extraordinary but the patient died six weeks after the first injection without any apparent delay in the progress of the disease.

Jacoby, of New York, reported some promising results from dyes. To a patient with secondary carcinoma of the liver, proved by exploration and histological examination of an excised nodule, I administered gentian violet in glutoid ampules. Her death occurred eight months after the operation, at which time the liver was found full of nodules, although no primary source could be discovered. Perhaps there was some relief, or it may have been only the comfort of the hope produced by active treatment; at least, the patient requested a return to the treatment when I stopped it because I could perceive no benefit. At any rate she lived longer than the average case of well developed secondary carcinoma of the liver.

I have tried emetin in several cases for no better reason than that carcinoma may be caused by one of the lowest forms of animal life. In the case of pyloric stenosis, diagnosed only by inspection, the patient is alive and well. In three cases of advanced secondary carcinoma it has had no perceptible effect, but it has caused no discomfort. In one case of retroperitoneal sarcoma, also diagnosed only by inspection at the abdominal section, Coley's fluid (or an error in diagnosis) has resulted in shrinkage of the tumor and gain in the patient's weight.

A few recent efforts are worthy of note. Of these, the most promising is the suggestion of Blair Bell that lead may be of benefit either alone or if used before x-ray treatment. He reports some cures, with pictures of the tumor—a method, alas, too commonly exploited by the x-ray enthusiasts—and also pictures of the histological specimens. He admits many failures. He fails to describe the form of colloidal lead employed, as well as the dose, although he lays emphasis upon the danger of giving too much or too little. He finds by chemical analysis that a disproportionate amount of lead is deposited in the tumor tissue and thinks that this may make it more susceptible to the x-ray.

S. Scherber of Vienna has used a specific ferment obtained from carcinomic tissues, and Gandier autoserotherapy. Stanley Wyard of England advocates a diet from which the fat soluble vitamin A is excluded. He is frank enough to admit that the best that can be said of this is that it is harmless.

Within the year there have been brought to my attention two methods exploited by circulars and word of mouth, one of which I know is being used with profit to the exploiter, but neither of which has been presented to the medical profession, and both of which are secret.

Although no remedy is available at the present time, there is no reason for hopelessness. I have the feeling that when effective treatment is discovered, it will be found that it is as important to apply it in the early stages as it is to eradicate the tumor tissue by surgical measures.

Palliative treatment, being the only treatment available, is the real subject of discussion. The object of surgery is to remove mechanical obstruction. The operation selected depends upon the size and nature of the obstruction. It may consist of gastrostomy for obstruction at the cardia, gastrogastrostomy for hour-glass constriction, gastro-enterotomy and jujenostomy, the latter restricted practically to cases of *linitis plastica*. For this condition Dr. Finney performed the operation upon one of my cases, but it gave no relief. For cardiac constriction dilatation with bougies is said to have relieved the dysphagia. In my experience it has been of no value, rather adding to the discomfort of the patient.

X-ray and radium have been of no value except in one condition. In certain cases of esophageal obstruction radium is of great service. One case had a carcinoma just above the cardia. Dr. Pancoast introduced a metal capsule containing radium into the stricture, controlling its location by the fluoroscope, and withdrawing it by a silk thread that had been attached to it. This was repeated several times, and the patient, who had been able to swallow only small quantities of liquid with great difficulty, became able to partake of solid food with satisfaction and with great improvement in his general condition for several months.

Gastric lavage is less used than formerly. This is due to the fact that operation is now performed early to relieve pyloric obstruction. Lavage is at best a makeshift, giving very temporary relief from the discomfort caused by the stagnation of the gastric contents, and does not improve nutrition nor prolong life. I have not had a case that has required it for several years.

Treatment by drugs is of slight value, but should not be neglected. Hydrochloric acid, theoretically indicated, is of little value. It should always be tried in the achylic cases, but only continued as long as it gives subjective relief. Bitter tonics, condurango, once lauded as a specific and still the best for the purpose of stimulating the appetite, nux vomica, and gentian help at most for a few days or weeks. Antifermentatives, as for example, guaiacol carbonate and resorcin are useless. Local antiseptics often allay pain. The best are orthoform, of the cocain group, and carbolic acid. They have the advantage that if they do not give relief promptly they can be stopped, and apparently they do no harm. Of all the drugs, morphin is the only one that gives actual relief, and its administration should neither be delayed nor stinted. It is indicated if there is pain, sleeplessness or excessive fear; and particularly in the latter condition, it may serve so to dull the patient's consciousness that a sometimes almost unendurable mental agony is relieved.

Summary: Although there is no way of curing carcinoma of the stomach at the present time, there is no reason to despair for the future. It is possible that extensive gastrectomy should be abandoned and surgery confined to palliative operations; but in view of the fact that errors in diagnosis are possible, palliative operations should be done whenever they offer reasonable hope of improvement. Morphin is the only drug that is certain to comfort the patient.

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DISCUSSION

Dr. Joseph C. O'Hail (Pittsburgh, Pa.): 1. *Hopelessness.*—This disease at this locality presents one of the most hopeless problems in the whole realm of medicine. Cancer in any place is horrifying and enough to make any of us shudder. This is especially true in certain places, particularly in gastro-intestinal or genito-urinary tract involvements, and more particularly if the growth be about the tongue, stomach, rectum or bladder.

Absolutely essential nutritional or excretory function is carried on at each of the localities, which gradually become encroached upon until one or the other is abolished. If it occurs in the nutritional tract, aside from the pain, which can be controlled, the victim starves amid plenty, sees the plenty but it is not for him to partake of—a Joshua outlook.

2. *Early Diagnosis.*—It is usually late when the patient first seeks aid. Probably loss of weight, strength, appetite and some epigastric distress has been going on for some time without attention. On examination little may be found, such as some variation in gastric analysis from normal, so that hypo-acidity may be the only symptom. The x-ray may show nothing. About three months ago such a case was observed. Dr. W. B. Ray found a normal-sized stomach, with no filling defects, pylorus and cap normal, emptying time normal. He reported no evidence of carcinoma. However, no free hydrochloric acid was found by the fractional method until the end of two hours and then it was in excess. The total acidity was low in all fractions.

Dr. O. C. Gaub operated and found a disc-like growth springing from the lesser curvature of the stomach, involving but little of the stomach wall but extending upward and outward, involving the celiac axis. It was utterly impossible to remove it. After seeing the field of operation, Dr. Ray again examined his plates and declared he could not see the slightest evidence for revising his previous opinion, judging from the plates alone.

3. Resection does give much hope, and is the only hope if the lesion be small and there is no metastasis.

4. Radium and x-ray are worthless in this region because of the inaccessibility. A dosage sufficient to affect the lesion would destroy the overlying tissues.

5. With the cause of cancer in its present unknown state and no specific known as yet, there is little hope that one will be found, for almost everything has been tried. The solution is coming only after the etiology becomes known. In other words, the cure will not come as quinin did for malaria or mercury for syphilis, from the empiric side, but as salvarsan did for syphilis, from the laboratory side.

6. Medical treatment is symptomatic and palliative only. The most urgent and insistent condition to be treated will be obstruction. This is paramount. Gastroenterostomy is the only means to relieve this condition. The patient may die from a general toxemia before obstruction comes on—a most desirable occurrence. The question may be raised: why operate thus in face of certain death? Death is easier and less terrifying by toxemia than by starvation in the midst of abundance of food.

Gastric lavage is double-edged. It may help if there be much retention. It may create a hemorrhage of no mean proportion.

Drug treatment used to keep up the digestive function seems rather futile. Hydrochloric acid is almost universally used, rather empirically, generally. Sometimes the question arises whether Nature does not have a conservative end in view when she lessens or stops the acid secretion of the stomach, particularly hydrochloric. This comes more forcibly to mind when we find so small an amount of the gastric mucosa involved, as in the case cited, under diagnosis with such a marked reduction of acid. In other words, does not acidity of the gastric contents increase the rapidity of absorption of pathological tissue? In contrast, where certain other tissues are destroyed we find the very opposite true; that is, one kidney may increase its function so that it does the work of its diseased fellow. When certain cells in the cord are destroyed, as in anterior poliomyelitis, the remainder increase their function. Were that law in effect here, might not the destruction of tissue much more swiftly follow?

Bitter tonics such as gentian, cardamon, condurango, etc., belong to a lesser degree in this class.

When it comes to anodynes we have something that is of inestimable value. Local anodynes are too evanescent to be of much service. They may be too dangerous, as cocain, or too feeble, as orthoform. At the head of the list of general anodynes, far in the van, stands opium in some form. In whatsoever condition opium is indicated, it is always the drug *par excellence*. This is one of the places where its usefulness is beyond the pale of question.

In conclusion, it may be stated that treatment is narrowed down to one of two things, depending for the most part on the time of the diagnosis: First, if the diagnosis is made early, resection should by all means be done, unless, as occasionally happens, early metastasis has taken place; second, if diagnosis is made late, then palliative treatment alone is all that can be done. This carries with it any means whatsoever that may be best adapted to each individual case. These means may and will vary widely in different cases but they will all somewhere, sooner or later, cross the only agent that is always the sheet anchor as the end approaches, namely, opium in some form. This must not be used either sparingly or recklessly. Euthanasia, regardless of the amount used or fear of habitation, must be the sole aim.

Dr. Martin E. Rehfuss (Philadelphia, Pa.): There are only one or two things that I have in mind. It is splendid to hear Dr. Sailer speak of carcinoma of the stomach and there are many things of value in his paper. Some years ago when I was asked to write the chapter on carcinoma for Oxford Medicine I asked them how they wanted it described—as it usually is in textbooks as accompanied by loss of weight, cachexia and so forth, or as a disease with some premonitory symptoms with a possibility of making a diagnosis in some cases If you get the tumor and loss in weight it is a death warrant. If you get cachexia the disease is too far along, but the fault is not all due to the doctor. It is partly due to the patient, for many of them have nothing but general loss of weight and asthenia. The symptoms have been present for six months without their knowledge of the conditions.

It is interesting to note that early diagnoses have been made. I heard from Seale Harris of Alabama that he had made several early diagnoses. In the British Medical Journal there was recently an article by Bennett, who points out that there is some free acid which persists for a long time, and he points out that carcinoma of the stomach is often accompanied by free acid and also by organic acids. When it comes to acid, it must be remembered that gastric syphilis, gastric carcinoma and the infective form of chronic gastritis all fail to give free acid. The infective forms give me no sign on the screen, but the other two show a filling defect and the Wassermann reaction will be positive in gastric syphilis. I have had a few cases of gastric syphilis without any definite signs.

With regard to gastric carcinoma, the stomach with cancer is one in which the function is destroyed, and when the function is destroyed both secretory and motor activities are destroyed. No one who has not examined the function of the stomach can estimate how much the motor part has to do with it. I think that in every case of gastric carcinoma all meat should be ground, and all vegetables should be ground and very thoroughly cooked so that the stomach will not have to do this work.

Contrary to Dr. Sailer, I believe in gastric lavage. I do not believe you would leave a carcinoma anywhere else in the body without occasionally trying to clean and disinfect it. Whether it does any good or not I do not know, but I believe if I had a gastric carcinoma I should like to have it occasionally washed out and disinfected and I believe I should like an occasional gastric lavage.

Dr. Thomas G. Simonton (Pittsburgh, Pa.): I think we often get a palpable tumor, a syphilitic tumor, of the pylorus. In one case a young man lost forty-five pounds in weight with a palpable tumor as big as your fist. He had vomited persistently for two weeks and had been fed by rectum for two weeks before he was brought to the hospital. It was felt that if anything was to be done it had to be done right away. The Wassermann test was made, and the next day a tumor from the pylorus as big as an egg was removed. The Wassermann reaction was 4 +, but without knowing this the pathologist a week later made a diagnosis of a gumma of the pylorus. The interesting thing was that on gastric analysis he had lactic acid, the Oppler-Boas bacillus, no HCl, and he had marked retention. As soon as the report on the Wassermann test came back we all came to the conclusion that the tumor was not a cancer but a gumma. We started him inside of forty-eight hours on arsphenamin intravenously and I never saw a patient pick up so fast. This was a case in which, without the Wassermann test, almost anyone would have diagnosed carcinoma in a severe form. That patient made an uneventful recovery and is now well and making a living.

Every once in a while we get a gumma of the pylorus that may fool us and give us a picture of carcinoma. I believe these cases are entitled to an exploratory operation to see if anything can be done and we can then determine afterward whether a gastro-enterostomy will be of any benefit. Every once in a while we will pass up one of these cases if we are not on the lookout. This patient was so desperately ill when admitted to the hospital, that we felt to have waited for the Wassermann test twenty-four to forty-eight hours longer, would lessen his chances of recovery.

Dr. Judson Daland (Philadelphia, Pa.): I greatly appreciate Dr. Sailer's conservative and quiet method of approaching this most difficult subject from the standpoint of diagnosis and treatment. I think the point he made regarding exploratory operation is very important. All of us know that error in diagnosis is not uncommon and Dr. Simonton has stressed this point. Many cases present a typical picture of far advanced gastric carcinoma. Nevertheless occasionally the diagnosis is erroneous; therefore exploratory operation is often advisable.

Patients with advanced gastric carcinoma and marked gastric stenosis may live a year in comparative comfort after a gastroduodenostomy, and surgeons should not decline to operate because of the condition of the patient and the inevitable fatal prognosis.

Dr. Sailer's emphasis on another point pleased me much, and that is the great difficulty in securing reliable evidence from which to draw reasonable deduction as to the effect of treatment. I will mention one illustrative case—a terminal gastric carcinoma. This patient said, "I have had a meeting with many friends and all agree that we shall go to church and hold a special service and pray for my recovery." He wished to know whether I approved. I did. They gathered every evening and had a fervent prayer meeting. The feeling was intense. The patient was receiving no treatment, but he reported to me at regular intervals. That man gained in strength, gained in spirit and gained eight pounds in weight, and then he died "on time." If such a remarkable temporary improvement in the clinical course of a case of terminal gastric carcinoma can be secured by prayer, with the ultimate outcome as I have described, you can readily see how an enthusiastic doctor may be led to believe in the curative power of certain drugs.

I wish to thank Dr. Rehfuss for his advice as to the treatment of ambulatory cases of gastric ulcer, which will greatly help the general practitioner. Surgeons state that failure to secure benefit from surgical treatment of gastric carcinoma is due to the physician not making an early diagnosis. That is true in a certain percentage of cases, but everyone knows that a certain proportion of cases of gastric carcinoma are symptomless, or the symptoms present cause so little inconvenience that when first seen by the physician a palpable tumor is already present.

The following case illustrates the extreme latency of certain cases of carcinoma. A woman, in excellent health, occasionally observed slight rectal discomfort when the bowels were moved. She consulted a rectal specialist who found a stricture of large caliber at the rectosigmoidal juncture. She was operated upon at once. The carcinoma had invaded, not only the wall of the sigmoid and rectum, but had extended into the perirectal tissues, and in the opinion of the pathologist had probably existed for one and a half years.

Dr. Ernest W. Willetts (Pittsburgh, Pa.): The point on which I wish to speak is the value of the Wassermann test in making a differential diagnosis between carcinoma and a syphilitic lesion. I think we must always remember that we will get a negative Wassermann reaction in a certain percentage of cases that are undoubtedly syphilis. We must be careful not to be led astray on a negative test. On the other hand, I have seen cases of carcinoma in the late stages in which we got a positive blood Wassermann reaction without ever being able to get other evidence of syphilis.

Dr. George E. Holtzapple (York, Pa): I wish to emphasize the point that lavage is sometimes of much use. I remember distinctly that some years ago Dr. Osler related a case of a man with a palpable tumor in the epigastric region. Exploratory operation was done, and a tumor was found in the wall of the stomach. A small section was removed from the tumor and divided into three parts. One part was sent to the pathologist of the University of Pennsylvania, one to the pathologist of Johns Hopkins University and one to the pathologist of Harvard University. The pathologist of Johns Hopkins University diagnosed malignant disease and the others benign tumor. Lavage was done. The man increased ninety pounds in weight and got so fat that they could not find the tumor any more. He lived for a year and then suddenly became emaciated and died. On postmortem, extensive carcinoma of stomach was found.

My observation does not quite harmonize with Dr. Sailer's, although I have great respect for him and for his judgment. I have seen lavage, very carefully done, pull a man out of bed when he was unable to get out because of advanced carcinoma of the stomach and when he was unable to retain food. I have seen such a man get out of bed, move around and attend to his business for at least three or four months as the result of careful gastric lavage.

Dr. Sailer (in closing): Some very interesting questions have been brought up in the discussion. I am very proud of my paper because I think you have learned more by the discussion it has elicited than by the paper itself. I did not touch upon the diagnosis, except very cursorily, of carcinoma of the stomach. It is understood that if the patient's condition justifies it, it is wise to get the Wassermann reaction before the operation, but in Dr. Simonton's case it was not possible. He got the result of the Wassermann test just after the operation, but I have no doubt the operation was a helpful adjunct in the treatment.

In regard to lavage, the stomach can be much better drained by a gastro-enterostomy than by the tube, if there is obstruction. If there is sufficient obstruction the tube will do no good except as it relieves the discomfort of the patient. If nothing goes through to the intestinal tract the patient will soon die of starvation, plus anemia, perhaps ahead of time in some cases. In so far as lavage, by giving temporary comfort, relieves the pyloric obstruction, it does harm by delaying the real method of treatment. If we have a patient in whom it suffices to feed some finely comminuted food it suffices for only a short time. I think there is no one in the room who has not seen a definite increase in weight after the obstruction is overcome by a gastro-enterostomy. Therefore, the diet seems to me less important than does the mechanical treatment of the case.

Now for the other treatments: Dr. Daland expressed my idea precisely as to their value. I think many times our treatment acts just as does a prayer in the church. It gives the patient tremendous psychical uplift and therefore it is a valuable thing for him. I think I mentioned in the early part of the paper that if we can help our patients by doing things for them, it is well worth while to do it. One patient to whom I gave Hodenpyle's serum was relieved, apparently, of all his objective symptoms and believed he was on the road to recovery. He was not; he died shortly afterward, and I do not believe the injection of the serum did any good whatever except that he felt that something was being done for him and he was better to that degree.

We have no cure yet, but I think we will get a cure and I think this will be through the discovery of the etiology. That may come as suddenly as did the discovery of the Treponema pallidum in syphilis. Then, knowing that, we are going to go ahead and devise a cure for the disease.

MONGOLIAN IDIOCY; REPORT OF TWO CASES IN THE SAME FAMILY*

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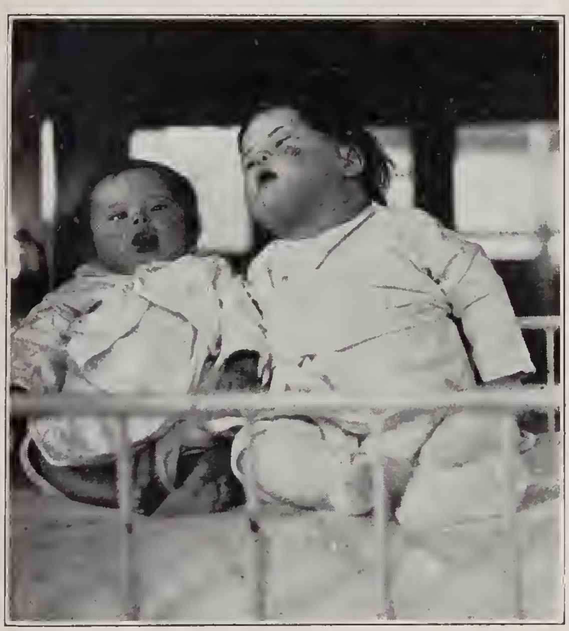
The symptom-complex we designate as mongolism is by no means a rare condition. However, the occurrence of more than one Mongolian idiot in a family is quite unusual. When we consider that about 5% of all cases of imbecility are of this type we wonder why multiple cases are not more frequently reported.

Goddard[1] has collected reports of 322 cases of Mongolian idiocy and in not one was there a history of more than one Mongol in the same family. Shuttelworth[2] says that the production of more than one Mongol in the same family is a great rarity, he having heard of only two cases and having never seen any himself. Schlapp,[3] in the course of examining mental defectives for the City of New York, has seen over 500 Mongols and has never seen two in the same family. Herbertsma[4] states that Mongolism in more than one child of the same mother is almost never reported. Vander Sheer[5] has collected reports of two families, one with two Mongols and the other with three, and states that he has been able to find on record histories of only eleven families in which more than one child was a Mongolian idiot.

REPORT OF CASES

I. P., aged 2½ years, and M. P., aged 8 months (see illustration), were brought to the Children's Hospital because they were not doing well. Father is living and well, aged 30 years, is a laborer of Austrian descent and of average intelligence. He has never been severely ill, is not a drinker and denies venereal infection. Neither of his parents nor any of his family were ever mentally affected.



Mongolian Idiocy in Sisters

The mother is aged 22 years, of Austrian parentage and of average size and intelligence. She gives no history of mental involvement of any character in parents, brothers or sisters. She states that during her first pregnancy a swelling in her neck developed which has persisted up to the present time, but has never given her any trouble. Slight nausea of short duration was the only trouble she experienced during either of her pregnancies.

Her first child, I. P., now aged 2½ years, was of normal size at birth, was nursed 18 months and did well. First teeth appeared at age of 2 years. Could not sit up or hold head up until two years old. Never has been able to talk, but makes some sounds. Always throws head back when looking at any object. Is a very happy child and has a pleasant disposition. Her second child, M. P., aged eight months, was born at full term of average size, nursed entirely for four months, then put on bottle because the mother did not have enough milk, and besides she was pregnant again.

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Both children show the typical signs of Mongolian idiocy—flat, short, upturned nose; almond-shaped, obliquely placed, widely separated eyes, which in the older child show an internal strabismus; mouth open and tongue, which is fissured, is alternately protruded and retracted; the head is small and fontanelles are open; the hair is brownish in color, soft, and in the older child shows an occasional grey hair. The skin is soft except on the scalp and leg, where there is a tendency to scaliness; the ears show the typical folding of the auricular margins and practical absence of lobes. In the older child the teeth are very much decayed. Heart in the older child shows a systolic murmur. Hands are short and stubby with incurving of little fingers. There is a marked relaxation of ligaments and muscular hypotonia.

Wassermann, urine and blood counts are negative.

Because of the obscurity of the cause of mongolism, several theories have been advanced to explain the origin of these cases. Some authors regard the condition as due to disease of the mother, such as syphilis or tuberculosis, which has an injurious effect upon the developing embryo. Vander Bogert[6] reports a family which apparently shows an intimate relationship between syphilis and mongolism. First a syphilitic child was born, second a normal child, and third twins, one of which was a syphilitic of the Mongol type. Statistics show that only about 15% of the Mongols on whom a Wassermann has been done gave a positive reaction. This percentage is probably no higher than you would get in any group of congenital defects. Many cases of mongolism die of tuberculosis, but this is probably due more to their low resistance to infection than to any inherent tuberculous condition.

The theory which seems to have special etiologic significance is that these cases are exhaustion products. A high percentage of Mongols give a history of being born near the end of the child-bearing period, or are the last born of a large family, which has led to reproductive exhaustion. Goddard[1] found that 51% of 294 Mongols were the last born of families of more than one child. Von Hofe[7] in an analysis of 150 cases found that the Mongol represented the last pregnancy in 72% of cases. Thursfield,[8] however, says that he finds no corroboration of the current statement that the Mongol is apt to be the last born of a large family, and adds that 42 mothers showed an average age of 36 years, and if four of these were excluded the average age would be 33 years. The fact that a high percentage of Mongols do not do well during infancy and therefore medical advice is sought early, no doubt accounts for many of these cases being recorded as the last pregnancy. However, the author has recently seen two Mongols born by mothers about 45 years of age, who gave a history of the preceding pregnancy having occurred 15 years before.

Because of the number of Mongols that are born in the prime of the reproductive period it is impossible to account for all being due to generative exhaustion. However, it would seem possible that any condition such as syphilis, tuberculosis, alcoholism, or other toxic influences might give rise to imperfect metabolism, resulting in exhaustion of the germ cell, even in women in the prime of their reproductive period.

Herbertsma[4] in a recent article has shown quite clearly from an analysis of 15 cases of mongolism in one of twin children, that the condition is germinal in origin rather than acquired during embryonal life, and advances the theory that mongolism is the result of defects inherent in the germ plasm.

The three outstanding features of mongolism are: impaired mental development; retarded physical growth and delayed development of sex organs. These symptoms coincide rather closely with the results obtained after experimental extirpation of the anterior lobe of the pituitary gland, which would indicate the possibility of the condition being of glandular origin. Pardee[3] reported two cases of mongolism in the same family and states that there was a strong endocrine heredity, especially on the maternal side. Even though such cases are due to defects in the germ plasm, this does not necessarily exclude the possibility of this defect involving the endocrine system.

Usually there is little difficulty experienced in making a diagnosis of mongolism. The chief condition from which it must be distinguished is cretinism. It is important that this distinction be made early, first, because of the benefit to be derived from specific therapy in cretinism and second, to save the parents the disappointment of expecting marked benefit from treatment in cases of mongolism.

A few of the chief differential points between mongolism and cretinism are as follows:

MONGOLISM	CRETINISM
1. Characteristics noticeable at birth.	1. Appear after 6-7 months.
2. Oblique shape of palpebral fissures.	2. Slit-like, longitudinal palpebral fissures.
3. Tongue large and fissured. Alternately protruded and retracted.	3. No fissures but too large for the mouth.
4. Skin smooth and elastic.	4. Skin dry, firm and scaly.
5. Expression elastic, vivacious and very imitative.	5. Dull and inelastic, apathetic.
6. Usually a very happy disposition.	6. Very unresponsive and morose.

There is little to be said regarding treatment in these cases. In the absence of any specific cure our efforts should be directed to improving the general health and nutrition. Thyroid extract may be used, not as a curative agent, but as a means of promoting metabolism. The cases that survive infancy and early childhood should be given the advantage of every educational opportunity. They should be placed in proper institutions, not only for the good of society and for their own protection, but in order that they might receive suitable training.

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DISCUSSION

Dr. Theodore J. Elterich (Pittsburgh, Pa.): Some years ago an autopsy performed on one of my cases suffering from mongolism showed an absence of the thymus gland. The function of the thymus gland is very little understood even at the present time. I have treated quite a number of cases with the extract of the thymus gland and some of them have improved materially. One child who has been under treatment for over two years is able to go to school and is considered intelligent. Of course he is not a normal child for his age. In a great many other cases the patients have improved. I do not know whether the improvement was due to the thymus treatment or just the regular development of the child. It remains to be seen. It will take several more years of observation and a great many more cases in order to state definitely whether thymus will do any good or not in these cases.

Regarding the dosage: beginning with a small dose, I give two or three grains three times a day. This is gradually increased to ten grains three times daily. Ext. thymus can be used in much larger doses than the thyroid. I should suggest to Dr. Scott that he treat these patients with the thymus gland.

Dr. Scott (in closing): I have nothing further to say except that the mother is about at term with her third pregnancy, and I think it will be very interesting to note the characteristics displayed by this child.

THE BRONCHOSCOPIC TREATMENT OF PULMONARY SUPPURATIONS AND BRONCHIAL ASTHMA[*]

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ETIOLOGY

At this time not a little discussion has been aroused as to the causative factor or factors in pulmonary abscess. No dissension from the three modes of infection is found, namely, (1) lymphatic extension, (2) blood stream infection, or (3) aspiration.

Lymphatic extension is generally considered a rare mode of pulmonary infection, but blood stream infection and aspiration are not so easily disposed of.

The late outstanding articles bearing on this subject are those of Fetterolf and Fox,[1] Cutler and Hunt,[2] Cecil and Steffen,[3] and Moore.[4] Cutler and Hunt are agreed with Fetterolf and Fox that in a larger number of these cases than have previously been so credited the infection follows the blood stream route to an ultimate termination in the lung tissues.

We do not assume the burden of the proof, but should like to point out certain conditions, factors and observations which have led us to place aspiratory infection as the most common cause.

Moore, after an analysis of the localization of the suppurating area in 202 cases which showed that the lower lobes were more often involved (41% right and 19% left), thought it justifiable to assume that the infection had followed the same route as for aspirated bronchial foreign bodies (Jackson[5]), which show in their localization approximately these percentages. The article by Fetterolf and Fox states that the lower lobes are the ones most commonly affected from a blood stream infection. Their contention, however, that infarction usually takes place, of which one of the cardinal early symptoms is expectoration of bright red blood, which they say may often be confused with secondary hemorrhage following tonsillectomy, has not been borne out by the history records of the cases of post-tonsillectomic lung-suppuration that have come to the Bronchoscopic Clinic.

It is an undisputed fact that the vast majority of postoperative cases of pulmonary abscess follow operations about the upper respiratory tract. Surely the same conditions pertain to any surgical procedure about the body, as far as the blood stream is concerned, whereas the aspiratory factor only becomes of importance in this connection when working about the upper respiratory tract. Fetterolf and Fox observe that "the actively muscular pharynx is a particularly favorable region for the dislodgment of such thrombi into the superior caval circulation," but surely abdominal operations have this same complication, due to respiration and peristalsis, and a patient with a raw surface in the throat swallows as little as possible.

Considering the number of such operations done at the present time it is pertinent to inquire

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TABLE OF CASES OF LUNG SUPPURATION TREATED BRONCHOSCOPICALLY

Case No.	Sex.	Age.	Duration of Disease.	Probable Cause.	First Symptom.	Location of Lesion.	Amount of Sputum.		Fetor.		Number of Bronchoscopies.	Present Status.
							Before Treatment.	After Treatment.	Before Treatment.	Present Time.		
1	Female	26	23 Yrs.	Measles	Productive Cough	Pul. Sup. R. L. L.			Present	Absent	33	Cured.
2	Male	23	21 Yrs.	Unknown, measles (?)	Productive Cough	Pul. Abscess R. L. L.					16	Improved.
3	Female	34	1 Yr., 7 Mo.	Severe pharyngitis and Laryngitis	Dry cough, productive 6 months later	Pul. Absc. & Bronchiectasis L. lung	Large amounts	Reduced one-half	Present	Decrease	11	(Include under unimproved.)
5	Male	7	7 Yrs.	Unknown	Cough at 2 weeks. Later productive	L. L. L., R. L. L.	Enormous amounts	Decreased	Slight	Absent	40	Improved.
12	Female	21	2 Mo.	Tonsillectomy	Productive cough	Pul. Abscess R. L. L.	¼ cup per day	Absent	None	None	16	Cured.
14	Female	49	8½ Yrs.	Tooth Extracted, F. Body	Cough, later productive. Malaise.	Pul. Abscess R. L. L.	Great deal	Decreased	Present	No change	5	Include under unimproved.
21	Male	12	8 Mo.	Tonsillectomy	Pain in post. rt. chest, followed by cough, productive	Pul. Abscess R. L. L.	Large amounts	¼ cup per day	Slight	Slight	9	Improved.
27	Male	16	1 Yr., 3 Mo.	Tonsillectomy	Pneumonia (?) Cough	Pul. Abscess R. L. L.	Large amounts	Decreased	Present	Lessened	12	Improved.
29	Male	40	23 Days	Unknown	Fever, chills, productive cough, hemoptysis 17 days later	Pul. Abscess L. U. L.	Large amounts	Decreased	Present	None	9	Improved.
30	Female	27	11 Mo.	Cholecystitis, ether anesthesia	Recurrent cough	Pul. Abscess R. U. L.	Large amounts	Occasional small amount	Present	Absent	9	Marked improvement.
35	Female	23	6 Wk., 2 D.	Tonsillectomy	Fever, cough, expectoration	Pul. Abscess R. L. L.	Large amounts	Small amount occasional	Present	Absent	3	Cured.
36	Male	40	3 Mo.	Tonsillectomy	Cough, productive	R. M. and L.	About 16 oz. per day	Same	Present		4	Unimproved.
41	Female	38	3 Yrs.	Childbirth, ether anesthesia	Cough, later productive	Pul. Abscess L. L. L.	1000 C.C. per day	250 C.C. per day	Present	Less	6	Improved.
38	Male	46	8 Yrs.	Unknown	Cough, productive	Pul. Abscess L. L. L.	Above 40 oz. per day	27 Oz. per day	Present	Decreased	8	Improved.

why this complication does not occur more often than is reported. Careful inquiry since the work of Richardson, Scudder, Manges and others, some 13 years ago, has brought to light pulmonary suppuration as a complication in increasing numbers. Making due allowance for the cases overlooked because of a lack of a "follow-up" system, the complication does not seem, relatively, a frequent one.

With either mode of infection would it not be well to take into consideration as explaining its comparative rarity the question of individual immunity derived from chronic infections of the nose and throat? For example, a person infected with chronically diseased tonsils should certainly have developed a degree of resistance to the bacterial growth which is conveyed to the lungs at the time of operation. This question, then, leads naturally to others. It would seem, after a study of the cases which have come for treatment, that a patient either in poor physical condition or in extreme shock at the time of operation had overcome the barriers of natural resistance and developed a field where infection plus lowered resistance resulted in pulmonary suppuration.

The work of Cecil and Steffen is interesting in this connection in that they were able to produce pneumonias in control monkeys by intratracheal insufflation of rich pneumococcic cultures. These occurred in the lower lobes and more frequently in the right lower lobe in animals who had not previously been immunized.

Lynah[6] inferred from roentgenograms taken after injections of bismuth suspensions made through a bronchoscope that the actual abscess cavity was usually smaller than had previously been supposed. Opinion at the Bronchoscopic Clinic is that the reverse is the case, and that involved areas are really larger than indicated by opaque mixtures, because the so-called cavity is filled with granulations that prevent the opaque mixture from extending fully out to the periphery of the suppurating area.

TREATMENT

The treatment of suppurative conditions of the lungs, and especially pulmonary abscess, has been attempted in many ways. These conditions, as in the case with many other ailments to which mankind is subject, either progress to spontaneous recovery, due to factors chief among which is the fortunate rupture of the affected area into a bronchus patulous enough effectually to drain the abscess; or the condition becomes chronic, with the definite involvement of a portion of the lung lobe surrounded by an area of edematous lung tissue, and because the condition is so well described by the words "sponge soaked," this term has been well used to define that tissue immediately surrounding the abscess.

The treatments advocated for this condition include:

(1) Confinement to bed for long periods of time, with an abundant nutritious diet.[7]

(2) Postural treatment.

(3) Vaccine treatment.

(4) Bronchoscopic aspiration and irrigation, or the instillation of medicaments.

(5) Surgical procedures, which include:

(a) Artificial pneumothorax.

(b) Phrenectomy.

(c) Ligation of the pulmonary artery.

(d) Thoracoplasty.

(e) Lobectomy.

Bronchoscopic treatment has now progressed to such a point that hope can be held out to the patient of decided amelioration of the distressing symptoms, and certainly in an as yet undetermined percentage of those cases unaffected with a generalized bronchiectasis, of a permanent cure. In any case the patient has lost nothing through delay while undergoing bronchoscopic treatment, and indeed a localization or a limitation, or both, may influence for good the end result. Moreover, he has incurred practically no risk by bronchoscopic treatment.

After treating many of these cases we have concluded that the use of one method to the exclusion of all others is a mistake. Therefore, when a patient with a pulmonary suppuration presents himself or herself at the clinic the following procedures are instituted:

The chest findings are ascertained by an internist, who also makes a thorough study of the patient for organic disease, after which the patient is referred for roentgen ray examination. Tuberculosis is excluded so far as possible by the usual diagnostic means. With the information thus obtained it then becomes a question of whether or not the case is one for a diagnostic bronchoscopy.

This preliminary work is necessary not because the bronchoscopic procedure is in any way dangerous, in proper hands, in a fit subject, but suitability of the case for bronchoscopic examination and treatment must be determined on the broadest scientific principles, not only for the best interests of the particular case under observation, but for the development to the fullest extent of criteria by which suitability can be determined in future cases. For instance, we recall a case in the past year, sent from a distant city for bronchoscopy, which on examination proved to be complicated by an extensive empyema. We did no bronchoscopy because the case was utterly unsuited to bronchoscopy, requiring immediate aspiration through a pleural external opening. The pleural cavity cannot be adequately drained by oral bronchoscopy, though intercostal pleuroscopy is often helpful. In this case even external surgery was unable to relieve a general septic condition which cost the patient's life. Had we performed a bronchoscopy we could have done the patient no good and would have brought undeserved discredit on a procedure that is of life-saving importance in properly selected cases.

Having localized, so far as possible, an abscess or bronchiectatic condition, a diagnostic bronchoscopy is performed. The condition of the mucous membrane of the tracheobronchial tree is noted as the bronchoscope is inserted. Two of the most important points to be carefully watched for are these: (1) The bronchus or bronchi from which suppurative products are exuding; (2) the presence of any factor which would constrict the lumen of the bronchus, and thus inhibit free drainage.

At this examination uncontaminated specimens of the secretion are taken, either by swab through the bronchoscope, or, if the quantity is sufficient and not too viscid, the collection is made by aspiration into a specially devised tube,[8] which can immediately be sealed and sent to the laboratory.

From these specimens, uncontaminated by oral infections, autogenous vaccines are made in each case. These vaccines are given twice a week. Fresh vaccines are made up at two-month intervals because we have found that the predominant bacterial content changes in patients under treatment. This change may be due in part to the treatment.

These patients are carefully instructed to aid by posture the drainage of the affected area; that is, by assuming a sleeping position on the right side if the left is affected, and *vice versa,* and also by observing special instructions as to posture during waking hours.

We have never insisted on absolute bed rest, unless there is fever or weakness, but an abundant nutritious diet, as for tuberculous patients, is outlined. Fatigue must be avoided and rest in bed a definite number of hours (14 to 18) each day to conserve strength and to build up a reserve is recommended.

At the second bronchoscopic treatment the bronchi draining the affected area are first thoroughly aspirated, using either the Jackson aspirating bronchoscope, or in case of the small bronchi whose lumen will not take the scope, using an independent aspirating tube inserted through the bronchoscope. The cleansing is done with a special solution containing: Trinitrophenol, 2 gr.; Lugol's solution, 1 drachm; normal saline solution, 1 pint.

This completes the treatment in some cases. Seven-day intervals are usually allowed between bronchoscopies.

In cleansing, large areas are never treated at one time, and flooding of healthy lung tissues is carefully avoided. The tributary branch bronchus is attacked separately, excluding the main trunk, and with specially devised apparatus. The return flow is always greater than the intake. A washing action is thus secured, and at the end of the treatment very little fluid is retained. This guards against a scattering of the infection to normal areas. Vegetable oils have been found very unsatisfactory. Only mineral oils are used. These at times are used either after irrigation or instilled after aspiration without any irrigation. We have yet to see a case where infection was spread after this treatment.

The lumen of a constricted bronchus is dilated at each bronchoscopy. Obstructing granulations sometimes require removal, but usually granulations disappear after purulent accumulations are prevented by bronchoscopic aspirations.

Bronchoscopy is done without anesthesia or sedative in children, and without general anesthesia in adults.

These patients are so little affected by this procedure that they are able to leave the clinic for their homes almost immediately and are treated as dispensary patients. Hospitalization is not required, though sometimes out-of-town patients are put in the hospital for preliminary study.

RESULTS

An analysis of the cases of pulmonary abscess treated at this clinic, including those complicated with bronchiectasis, in percentages, is as follows: Cured, 21.4%; improved, 57.2%; unimproved, 21.4%. The cured cases are pronounced cured only after prolonged cessation of symptoms and complete x-ray studies. The improved cases have had marked amelioration of symptoms and in most instances have been able to resume occupations. The improved cases include those on whom we are still working, hoping for an ultimate cure. The unimproved class was chiefly made up of those patients with extensive bronchiectasis. These cases, as before mentioned, respond very poorly or not at all to this treatment.

Patients are willing to continue the treatments as long as we deem it advisable, because of the lessening of cough and foul expectoration, and improvement. We have yet to see the patient who declined further treatment because of any dread of a repetition of the bronchoscopic treatment.

To the often-asked question: "In what class of cases do you believe bronchoscopic treatment indicated?" our reply has been that while this question can be definitely answered only after many thousands of cases have been treated, in a general way it may be stated that as a working basis for the present we believe diagnostic bronchoscopy is indicated:

(a) In any patient in good general condition, and with a not too extensively diseased lung.

(b) In any case in which the internist desires the aid of bronchoscopy with aspiration or medication as an addition to his general measures.

Bronchoscopy is contra-indicated:

(a) In cases of recent profuse hemorrhage.

(b) In a moribund patient.

(c) In very extensive disease of lung tissue, involving one-half or more of one lung.

(d) In organic disease of the heart and great vessels.

(e) In laryngeal tuberculosis.

ASTHMA

We are now at work on a large group of cases of bronchial asthma. It is too soon for definite conclusions, but brief citation of cases showing mode of treatment and results after six months is included.

An autogenous vaccine is made at first bronchoscopy; then a medicated solution is instilled, first in the right and then in the left main stem bronchus. The following is the formula we have most frequently used: 20 drops 1-1000 adrenalin sol.; 10 drops (10%) cocain; normal saline solution, 1 drachm.

Some of these cases have a considerable quantity of thick tenacious secretion clinging to the bronchial walls. This should be removed before instillation of the special formula, either by suction or by swabbing.

These treatments were given at seven-day intervals generally for the first three times, after which the patient reported not oftener than once every three weeks or a month. However, in each case they reported only on recurrence of asthma.

The bacteriological study of bronchoscopically secured specimens from patients with tracheobronchial asthma has not been completed. Generally staphylococci, streptococci and catarrhalis were present in cultures.

The mucous membrane at the first bronchoscopic examination generally presents a bluish-red appearance as of a passive congestion. At the second treatment this is not so marked, and it has generally disappeared at the third bronchoscopy. In two cases there was almost complete expiratory collapse of the bronchi and trachea. One case seemed to collapse anterioposteriorly and one laterally. In several cases the asthma was accompanied by a real tracheobronchitis. No spirals or fusiform bacilli have been found. Charco-Leyden crystals were reported in only one case.

RESULTS IN ASTHMATIC CASES

Sixteen cases have been treated. Fifty per cent of these have shown marked improvement. One case reported recently for the first time in three months, stating he had been free from asthma until the day before reporting, and that this was his longest respite in seven years. Before treatments he had had attacks daily. He had been given seven treatments. Another case was complicated with pulmonary abscess. Her doctor reports that she is now pregnant and that the lung symptoms are giving her no trouble.

Another case received ten treatments and is now able to resume an occupation which previously was interrupted by his attacks of asthma.

In all, sixteen cases have received treatment, in which we can report a definite improvement extending over three months in five. Of the others, three are questionable, one having received only one and the others two treatments, and have since not reported to the clinic.

CONCLUSIONS

1. Aspiration of infective material is an important factor in the production of postoperative pulmonary abscess.
2. Bronchoscopy is attended with no danger when performed by a team properly trained to work together.
3. Bronchoscopy is the logical means to facilitate better drainage and aid medical treatment. Free drainage is always fundamental for suppuration anywhere.
4. Patients are willing to continue the treatments as long as we deem it advisable, because of the subjective evidence of the lessening of cough and foul expectoration, and of the improvement in the general health.
5. Cases of pulmonary suppuration cannot all be cured by bronchoscopic means. A certain percentage certainly can be, and a large percentage can be improved. The rest, with few exceptions, are made happier through the alleviation of symptoms which have made the patient thoroughly wretched both day and night.
6. Bronchoscopic instillation of medicated solutions seems to alleviate "asthmatic attacks" for relatively long periods.

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DISCUSSION

Dr. F. J. Bishop (Scranton, Pa.): In trying to open a discussion of this most excellent paper by Drs. Moore and Lukens, the first thing that strikes me is that the Section is to be congratulated on having this subject, and in this most excellent manner, brought to our attention; and that we certainly owe our thanks to the essayists for the information contained therein.

The subjects are very interesting to me and I am a little disappointed because they have not compared the results of the surgical treatment and the treatment by the use of the scope.

This seems to be one of those newer border-line cases; as, for instance, is the antrum. Should this latter be a field for the dentist or the rhinologist in certain cases, or both?

As for the lung abscesses, should they be seen by the surgeon or the bronchoscopist, or both? It would seem at present that we should treat patients as advocated in the paper; that is, all forms of treatment should be considered in every case.

In using the expression, "newer border-line cases," it is to be understood that the disease under discussion is not new as regards time, for "Hippocrates pointed out that lung abscess sometimes bursted into a bronchus and spontaneously cured itself, and that occasionally it ruptured into the pleural cavity and had to be drained." Willis in 1664, and Burman in 1696, suggested incision for drainage, and so on down through the space of time. In looking up the literature as to the percentages of unimproved, improved, cures, and deaths, these figures are a mass of haze and it will be impossible to dwell on them.

As to the increase in the number of cases: Here history repeats itself, and this compares with the earlier days of appendicitis, sinusitis, and other conditions. This increase is accounted for largely by the following: better diagnosis, the greater number of operations on the upper air passages (many by the general practitioner), in the absence of the suction apparatus, and ether under compression, requiring a long time for operation. In my opinion these conditions give us many of our cases of lung abscess.

As to the modes of infection, namely, (1) lymphatic extension, (2) blood-stream infection, or (3) aspiration, I believe, as the writers of the paper express it, that aspiration and blood-stream infection play the major part, but probably the last word on this has not been said. There is room for much argument, pro and con, in favor of either that time will not permit. How many cases have you seen following sinus operations or post-pharyngeal abscesses?

Symptoms: On account of the limited experience I have had with this class of cases, I have very little to say and certainly nothing to add. I certainly agree with the essayists, that the principal complaint of these patients at this time is the profuse, horrible, fetid expectoration. These patients were all seen after weeks or months had elapsed from the beginning of their abscess.

Treatment: We have practically followed the treatment outlined in the paper, except that we have not used vaccine. No surgery has been done on any of our cases, neither have we employed morphin, or any anesthetics.

We have simply aspirated the cavity with a Lynah aspirating tube, followed by the introduction of 50 per cent argyrol solution into the cavity. Briefly, we have seen six cases, three of which in the 24th to the 72d hours before coming to the table, were fortunate enough to have the abscess rupture into a bronchus with sufficient drainage to cause a quite rapid recovery. Two of the remaining three had one and two treatments, with so much improvement that they refused to continue. The third case was a man of 54 years. The first aspiration relieved him so much that he begged on the third day to have the procedure repeated. We repeated this aspiration and injection several times, the patient steadily improving, when suddenly the abscess ruptured into the pleural cavity and the man died in a very short time.

Bronchial Asthma: My experience with this subject is very limited indeed, as I have treated but one case. I have certainly been interested in this mode of treatment and have been expecting some good results from the same. In this single case coming under my care, in a young man, we simply drained, and sponged the membranes as dry as possible and then applied 50 per cent argyrol to everything in sight. Result: this man was immediately relieved and very much improved for as long as we were able to keep track of him, which was for a period of about three months. This is the longest he has been free for several years. We have lost track of him and do not know what the result now is. This case we saw about one and one-half years ago.

Dr. Elmer H. Funk (Philadelphia, Pa.): What I have to say in this discussion is from the point of view of an internist who has had the privilege of seeing most of the patients before, during and after bronchoscopic study and drainage by Dr. Lukens and Dr. Moore. Internists are finding more cases of pulmonary suppuration than formerly. Whether this is due to an increased incidence or more frequent recognition, or both, is not for discussion this morning. The important thing is that in bronchoscopic drainage as practiced by Dr. Lukens and Dr. Moore under Dr. Chevalier Jackson's guidance, we have a new and valuable procedure in the treatment of localized lung suppuration.

Until recently, when such a patient came to us we debated whether or not to resort to surgery, realizing the high mortality of operative procedures. Lockwood states that the literature contains reports of 1,117 cases of lung abscess with an average mortality with surgical treatment of 34.6 per cent. Lilienthal, who may be regarded as having had an extensive experience with resection of the lung for abscess, had a mortality of 54 per cent. In bronchiectasis, Graham found, among 48 reported cases submitted to lobectomy, an operative mortality of 52 per cent. This does not mean that all of those who recovered from operation were cured; many of them no doubt were unimproved. Is it any wonder that internists have been loth to refer their patients to the surgeon? We who were conservative waited, hoping that drainage by way of the bronchial tubes would become established in due time; and when this occurred we endeavored to aid drainage by posture of patient. Some have tried to help matters by including pneumothorax. Rich and others have reported favorable results. This method, however, is not without danger, and two deaths from this procedure have been reported by Wessler.

When we review the brilliant work of Chevalier Jackson which has demonstrated how well lung suppuration clears up after the causative foreign body has been removed by bronchoscopy and the establishment of adequate drainage, one is forced to the conclusion that a trial of the same procedure has a rational basis in those cases of lung suppuration not due to foreign body. Furthermore, the value of any procedure is enhanced when it can be shown that it is safe. From my observation of the work done by the bronchoscopists at Jefferson, I can affirm its safety in their hands. There is no mortality and no appreciable ill effects from bronchoscopy in suitable cases. It is not fair to expect the method to be of value in moribund patients or those with widespread suppuration or multiple abscess formation, or with complications such as empyema, etc. On the other hand, to witness the reduction in the amount and fetor of the sputum, the improvement in the cough, the improvement in the general condition as a result of the lessened toxemia in patients bronchoscoped by Dr. Lukens and Dr. Moore, is to witness that which occurs less commonly with other present-day methods.

In one of the patients reported by Dr. Lukens and Dr. Moore, a young woman with a bronchial abscess of years' duration, bronchoscopic drainage was followed by such striking benefit that she was able to return to the society from which she withdrew because of the offensiveness of the cough, expectoration and fetor of the breath. In this same patient the trophic improvement was shown in a striking way in the improvement in the curved finger nails. Shortly after treatments were begun a ridge occurred at the roots of the nails. This was watched and it was found that the incoming nail was more normal in shape and appearance than the outgrowing nail beyond the ridge.

I grant there are certain cases of lung suppuration which seem to clear up without treatment, others respond to postural drainage, therapeutic pneumothorax, thoracotomy and lobectomy. Personally, if I had a localized lung suppuration, I should prefer that my physician should call in as an aid in treatment the services of a skilled bronchoscopist. And I would have a confidence in the help which bronchoscopy for drainage can give. It will not work in every case, but in the hands of skilled men its safety commends it to trial. And I know it has helped a number of patients, in whom surgical procedures were contemplated, to evade the knife and recover.

Dr. Chevalier Jackson (Philadelphia, Pa.): Much of what I intended to say has already been said by Dr. Bishop. I should like to compliment Dr. Lukens and Dr. Moore on this presentation. There is only one fault I can find, and that is that because of the technicalities of the moving picture apparatus the patients look ghastly when they get through the treatment. As a matter of fact, they come off the table smiling and say they did not mind it. Little children will walk to the table and climb up to go through with their treatment, though knowing exactly what to expect. It is no more of an ordeal than having a tooth filled by a dentist and does not last anything like as long. Personally, I should very much rather have Dr. Lukens and Dr. Moore wash pus out of my bronchus than have a sensitive tooth filled. I mention this because the statement has been made in the *Journal of the American Medical Association* by an eminent internist, that any man who has ever had bronchoscopy once would rather have any operation done than go through it again. I do not know, but I presume that that internist had some of his patients bronchoscoped by untrained men.

Bronchoscopic drainage and aspiration of the diseased lung seems very new; but in principle we are really harking back to Hippocrates and his predecessors who preached and practiced the fundamental surgical rule of drainage. In these cases the ciliary action is impaired, the bronchi are stenosed, and we thus have impairment of natural drainage. This treatment, so beautifully demonstrated by Drs. Moore and Lukens, is a method of improving pulmonary drainage. How much is due to medication and how much to drainage no one knows at present. We will know after we have bronchoscoped a few more thousands of cases.

I wish to emphasize one point in the paper, and that is the necessity of the bronchoscopist consulting with the internist, the roentgenologist and the surgeon. The ultimate decision as to whether the case is suited for bronchoscopic treatment should rest largely with the internist who has a broad viewpoint and is not subject to the bias that many of us other clinicians have in the enthusiasm of our work.

COMMUNICATIONS

THE ALLEGED DISCOVERY OF THE CAUSE OF CANCER BY DR. GLOVER

Toward the end of April several newspapers contained statements that important announcements were soon to be made about the cause and cure of cancer at a medical meeting to be held in this city during May. The meeting did not materialize, but it appears that an attempt was next made to have the meeting staged by the County Medical Society. This failed, however, as its promoters refused to comply with the suggestion that the subject first be discussed with an impartial committee. Shortly after, various members of the profession received an invitation from the Philadelphia Clinical Association and the National Stomach Hospital to hear papers on the "Cause, Immunity and Treatment of Carcinoma," by Dr. T. J. Glover of New York and Drs. M. T. Warmuth and J. T. Donnelly of Philadelphia, at the Academy of Natural Sciences, whose lecture room had been secured for the occasion.

This is mentioned to correct a statement in one of the newspapers that the papers had been investigated and censored in advance by a committee of the Academy.

Dr. Glover said: "From every type of carcinoma I have been able to isolate in pure culture a specific organism which, when inoculated into healthy animals, produces the disease. Afterward I have been able to recover the organism in pure culture from these animals. I have also been able to immunize healthy animals against the disease. From the blood of a large percentage of carcinoma patients I have obtained pure culture of this organism." He then gave various bacteriological details about its size, spore formation, biological reactions, toxic formation and the preparation of antitoxin, and showed gross and microscopic slides of his experimental lesions and of the spore-bearing bacillus with which he worked. He did not, however, give the way in which he procured the organism from the clinical cases nor the culture media in which it was grown, nor did he state the number of times in which it had been recovered from human cases, nor the specific types of carcinoma recovered from. When asked later by those discussing the paper specifically to do so, he refused on the ground that he was not ready, although these were obviously necessary supports for the claim that he was now publicly making that he had found the cause of cancer.

The papers by Drs. Warmuth and Donnelly gave the results of their use of Dr. Glover's serum at the National Stomach Hospital since January, 1923. Of 84 cases, they considered 56 hopeless, 11 doubtful and 17 favorable. Of the hopeless cases, 22 were dead, 4 were said to be improved, 27 unimproved and 3 symptom-free. Of the doubtful cases, 2 were dead, 5 said to be improved and 4 symptom-free. Of the favorable cases 7 were said to be improved and 10 symptom-free. Both doctors explained that they did not feel that they had a "cure" for cancer, but that it was a valuable method of treatment, especially in the early cases. Dr. Warmuth emphasized the great symptomatic improvement that he found in the treated cases, though "I do not mean to say that every case of carcinoma has followed the course outlined." Unfortunately neither doctor gave his report in such a way that it was possible for the audience to tell which types of carcinoma did well and which badly, nor did they analyze their 84 cases in the various types of carcinoma. The distinction made by both between "carcinoma" and "epithelioma" was rather confusing. Although it was stated that every effort was made to verify the diagnosis of cancer and only cancer cases were treated, it was not stated in which cases or in how many the diagnosis had been verified microscopically, so that it was impossible to tell how many of their cases were proved cancer.

A few opaque x-ray slides of selected cases were shown by Dr. Wiley, ostensibly of cancer of the digestive tract. These were far from convincing. Not only is it well known that marked filling defects of the stomach may occur without any sign of cancer at autopsy, but also two of the cases shown bore very little resemblance to cancer at all.

The discussion was opened by three doctors from St. Michael's Hospital, Toronto, Julian Loudon, E. E. King and James McCormick, who testified to their belief in Dr. Glover's personal integrity, and the valuable nature of the work, in their opinion. Dr. McCormick presented Dr. Glover's case against the investigation by the committee of the Toronto Academy of Medicine, an account of whose report can be found in the *Journal of the American Medical Association* for 1921 (Volume 76, pages 52 and 396)

The chair then called on Dr. Krusen, who spoke (not "reviewing the history of scientific work from Harvey's to the present time," as one advance newspaper account put it) of the valuable nature of the discovery if it should be confirmed, and called on Dr. Glover to "lay all his cards on the table," so that other scientists would be able to repeat his tests and prove or disprove that the cause of cancer had been found. Dr. Kolmer also asked that further details of technique be given, so that the work could be repeated, but this Dr. Glover flatly and vehemently refused to do until he felt ready to do so. Dr. Kolmer also called attention to the fact that very favorable reports in the treatment of cancer had been made for a number of years, with the use of various sera, vaccines and so forth, and he was inclined to attribute the improvement in them all (like the present series) to the action of foreign protein.

Dr. James Ewing of New York was next called upon by the chair. He said "in a spirit of friendly criticism," that he did not think that Dr. Glover had presented convincing evidence that his particular microörganism could produce cancer and he did not believe that cancer was due to a microörganism at all, as all the evidence pointed the other way. After reviewing various other alleged bacterial causes of cancer, which have now been entirely discarded, he expressed his opinion that some of the experimental specimens presented by Dr. Glover were definitely not cancer, and that as he had not stated which microscopic went with which gross specimen, it was impossible to get definite information from them.

As the presiding officer was about to call on Dr. Glover to close the discussion, although every speaker had thus far been called upon by the chair, Dr. Petty exhibited a copy of the early edition of the next morning's *North American* with a verbatim account of the paper that Dr. Glover had just read. As Dr. Glover in his opening remarks had decried publicity and said, "I have done my utmost to keep this matter very quiet," the contrast was striking and left an obvious answer to Dr. Petty's question, "Is this advertising or is it not?" (It should also be recorded that the *North American* of the next day—Friday—contained a complete verbatim report of the papers of Drs. Warmuth and Donnelly. I understand that Dr. Warmuth's reason for giving these to the press without consulting the County Medical Society was that if he had not done so he was given to understand that a much more sensational account would have been published and he only had ten minutes in which to decide!)

In his closing remarks Dr. Glover attacked Dr. Kolmer so vehemently on personal and inconsequential grounds, that Dr. Kolmer asked permission again to address the audience and gave his reasons for his former statements, which he reiterated more strongly. Dr. McFarland also recounted his personal experiences on being invited to Dr. Glover's New York laboratory, where Dr. Glover refused to show him various necessary proofs of his claim, so that Dr. McFarland was far from being convinced of its truth.

In his final remarks, Dr. Glover became so illogical and vituperative that he was hissed and booed and the meeting broke up in confusion. It is said that he had some microscopic and other fresh preparations to exhibit, but shortly before the end of the meeting, when the presiding officer asked if he wanted an announcement that he would show them, he answered that he did not care to do so. E. B. KRUMBHAAR, M.D.

Philadelphia, July 16, 1924.

REPORT OF THE MEETING OF THE PHILADELPHIA CLINICAL ASSOCIATION, AND THE CLINICAL SOCIETY OF THE NATIONAL STOMACH HOSPITAL, JULY 9, 1924

On July 9, 1924, at the Academy of Natural Sciences before a meeting of the Philadelphia Clinical Association and the Clinical Society of the National Stomach Hospital, Dr. T. J. Glover of New York read a paper upon the cause of cancer, giving a preliminary report of his investigations. He stated that from every type of human cancer he has been able to isolate in pure culture, a specific organism, which when inoculated in healthy animals produces cancer. Afterwards, he has been able to recover this organism in pure culture from these animals. In a large percentage of cancer patients, he has been able to isolate pure cultures of this organism, from the blood.

Morphology: The organism is a bacillus which occurs singly, in pairs and in chains of three or more. The bacilli forms small oval spores, one in each bacillus. As the spore develops, the mother cell becomes less distinct until it entirely disappears. In old cultures that have been kept for months and where the media are dried up, small round or pear shaped spore sacks are found, each sack containing numerous spores. The organism is Gram positive.

Biology: The organism is an aërobic and facultative anaërobic, liquefying motile bacillus. It grows best at a temperature of 35-37 degrees centigrade; above 40 degrees centigrade the growth is retarded. During the period of spore formation it loses its motility. The spores are very resistant to outside influences. They withstand an exposure to dry heat for one hour at 90 degrees centigrade, but are killed by an exposure of fifteen minutes at ten pounds pressure to live steam. They are killed by the action of five per cent solution of carbolic acid for one hour. When the organism is grown in fluid media at a temperature of 35-37 degrees centigrade it produces a toxin of weak potency which deteriorates on keeping and is affected by exposure to light, heat or oxygen. It is destroyed by heating at one hour at 55 degrees centigrade. When inoculated into animals in appropriate doses, it stimulates the production of an antitoxin which will neutralize the toxin. When a lethal dose of toxin is injected subcutaneously into a 200 gram guinea pig, it produces a local edema at the point of inoculation, with loss of weight and an engorgement of the suprarenals and death on the second or third day. It is this toxin which induces the cell proliferation in carcinoma and it appears it is the irregular distribution of the organism in the epithelial cell which causes the asymmetrical, hypochromatic and hyperchromatic mitoses and infiltration of carcinoma.

Dr. Glover also stated that he was able to prepare an antitoxin by immunizing horses after the same manner as in the production of the diphtheria antitoxin. He also stated that he was able to immunize animals, after which it was impossible to reproduce cancer in them. Following this, he presented photographic slides of his organism and animals in which he had produced the disease.

After Dr. Glover had read his paper, Dr. M. P. Warmuth and Dr. J. F. Donnelly of the National Stomach Hospital, gave the results of their experience with the use of the serum produced by Dr. Glover for the treatment of carcinoma. They explained the methods they used to select only cancer patients to test the serum. They found that the effects were of two kinds, one immediately following the injection of the serum and the other, the effects it produced upon the disease. They first noted that there was an improvement in the mental activity of the patient, followed by a relief from pain and the disappearance of the foul and obnoxious discharges. In most cases that have improved, they have gained in weight and there has been a gradual disappearance of the growth in the early stages. In the extreme cases, those having only a few weeks or months to live, have little to expect from the serum. It is not a "cancer cure" but a treatment for carcinoma. Therefore a certain number will not benefit, but better results have been obtained than by any other method of treatment. The treatment is given with a hypodermic syringe and injected into the tissue of the body. It makes little difference where the serum is injected, the effect is the same. The doctors advise giving it in small doses, with special attention being paid to the effects on each particular case. They also claim that it is not without danger when used indiscriminately and in advanced cases, or where there are other complicating diseases at the same time.

Up until May 1, 1924, they have reported upon 84 cases that have been treated. This does not represent the total number treated, but those treated since that time are so recent that a report on their condition would be of little value. Of the 84 cases, 25 have died, 4 show no improvement, 38 are improving, and 17 are symptom-free. Some of these have been symptom-free for as long as a year and a half. The serum in no way removes surgery from the treatment of this disease. Whenever it is possible to remove a growth by operation, the doctors advise it, as the action of the serum upon the remaining diseased glands throughout the body is more rapid and effective. After using Dr. Glover's serum for over a year and a half the doctors have come to the following conclusions:

1. That the serum has a selective action for cancer tissue and is a therapeutic agent of distinct value in the treatment of carcinoma or cancer.
2. That it is a treatment for carcinoma or cancer and not a "cancer cure."
3. That in early cases when the disease is local, a large percentage will yield to the serum treatment.
4. That in advanced cases the main growth should be removed by surgery, as the disease disseminated through the system will be better treated by the serum.
5. That in extreme cases little is to be expected from the use of the serum.
6. That all advanced cases should be treated in hospitals.
7. That frequent examinations and manipulations are very harmful.

In the discussion of the papers Drs. Kolmer, Ewing and McFarland were not convinced that Dr. Glover had proved his contention that he had discovered the cause of cancer.

Dr. Kolmer thought that his media should be presented at once to the profession in order that his work could be reproduced in other laboratories. This was necessary to convince the profession that he had discovered the cause of cancer. In regard to the serum and the results reported, he said other investigators had obtained equally good results from using non-specific proteins in treating cancer.

Dr. Ewing was not convinced because he thought it was impossible for cancer to be caused by a microörganism and that Dr. Glover had not shown anything that convinced him he had discovered the cause of cancer.

Dr. McFarland did not think that the evidence Dr. Glover presented was at all convincing, in fact he had virtually showed nothing to prove his claim.

In reply Dr. Glover stated that he was not ready to give the formula for his culture media, as his work was not completed, but that he would do so just as soon as it was. Louis R. Wiley, M.D., *Secretary*.

1512 N. Fifteenth St., Philadelphia, Pa.

The following letter, sent by the Secretary of the Philadelphia Clinical Association to Dr. T. J. Glover, is self-explanatory:

Philadelphia, July 24, 1924.

DR. THOMAS J. GLOVER,
121 WEST 52d STREET,
NEW YORK, N. Y.

Dear Doctor:

The Board of Directors of the Philadelphia Clinical Association held a meeting on the afternoon of July 21st for the purpose of considering the unusual events which transpired at the joint meeting under the auspices of the Philadelphia Clinical Association and National Stomach Hospital on June 9th at the Academy of Natural Sciences, and formulating a resolution concerning same.

Doctors Donnelly and Warmuth were present at this meeting, by invitation, and when the question was presented for discussion, Dr. Donnelly assured the Board of Directors that it was your pleasure the matter be dropped. The Board, being thus advised of your wish in the matter, then passed the following resolution:

"We recognize everyone's right to an honest difference of opinion. There were many present who thought your presentation was not sufficient to convince them that your claim was proven. This in no way questions the accuracy or correctness of your contention, but simply means that you did not present sufficient evidence to convince them. As your report was only preliminary, the Philadelphia Clinical Association extends you a cordial invitation to present your complete work before that Society when ready to do so."

Very truly yours,
Louis R. Wiley, *Secretary*.

Under date of July 23, 1924, the following letter was written to the secretaries of the component county medical societies of the Medical Society of the State of Pennsylvania. This communication is of equal importance to every medical practitioner in the state of Pennsylvania.

Dear Doctor:

During the meeting of the Medical Society of the State of Pennsylvania to be held in Reading, arrangements have been made by virtue of which some 20 of the leading medical men of the state will examine 100 of the doctors who think they are well. To each of these medical men of the examiners will be assigned 5 doctors. The examinations will take place in the private office of one of the physicians of Reading. The findings of these examinations will be regarded as absolutely confidential in so far as the individual is concerned. After the examination is completed the examiner and the examined will confer as to how it might be better conducted and will discuss the advice given as to result of this examination.

It is the desire of the Committee that this examination be conducted the first day of the meeting. All details of the program are ready for completion as soon as we have a reasonable number of volunteers. It is obvious that each man examined will receive a lesson in the proper conduct of a periodic examination for the purpose of forestalling physical impairment. It is also probable that many valuable suggestions will be made by both examiners and examined which will be helpful to the Committee in formulating a method which may be used by the profession as a whole and which may be applied to the patients.

Will you bring this matter before your County Medical Society, or before individuals in that Society, and ask those who wish to profit by this procedure to send their names to Dr. F. L. Van Sickle, Executive Secretary of the Medical Society of the State of Pennsylvania, 230 State St., Harrisburg? They will then receive a history blank, which they will fill out and will also have a urine examination, a record of which they will take with them to Reading, together with a properly filled history blank. They will also receive an appointment in Reading, the hour and the specific place and the examining doctor being named.

For instance: Dr. James Wilson writes to Dr. Van Sickle that he believes he is perfectly well, but would like to have an examination to determine whether he is right in his belief, and second, to learn something of the manner in which this medical examination should be conducted. He will receive from Dr. Van Sickle an examination blank, the history part of which he will fill in. He will, further, have his urine examined, preferably a 24-hour specimen, for specific gravity, protein, sugar, formed elements and total quantity. He will also receive from Dr. Van Sickle the statement that he is to report on Tuesday, October 7th, at half past ten, at 135 Fourth St., Reading, to Dr. Alfred Stengel for a medical examination.

If this is not perfectly clear, write to Dr. Van Sickle for further details. If it is clear, get some of your best men to send in their names. We shall probably have many more volunteers for examination than can be accepted. They will be listed in accordance with the time of application. Believe me,

Faithfully yours,

Edward Martin, *Chairman,*
Committee of Public Relations.

PENNSYLVANIA STATE CHAMBER OF COMMERCE

TELEGRAPH BUILDING, HARRISBURG

TO MEMBERS OF THE PENNSYLVANIA STATE CHAMBER OF COMMERCE

SPECIAL MESSAGE

In order to instill an interest in the important subject of voters exercising their right of franchise, we urge you to place before your employes the following information to equip them to vote at the coming election.

The date of the general election is Tuesday, November 4, 924, and all polling places are open from 7 a. m. to 7 p. m., standard time.

To become eligible to vote at this election every qualified voter must become enrolled under the Personal Registration Act. Registrars will sit at the regular polling places in each election precinct on the following days:

Thursday, September 4th.
Tuesday, September 16th.
Saturday, October 4th.

In Philadelphia they sit from 7 a. m. to 1 p. m. and from 4 p. m. to 10 p. m.

In Pittsburgh and Scranton from 7 a. m. to 10 a. m. and from 4 p. m. to 10 p. m.

In all other cities from 8 a. m. to 1 p. m. and from 2 p. m. to 6 p. m and from 7 p. m to 10 p. m.

All voters shall have been assessed at least two months before an election and all voters must have paid a state or county tax within two years. Payment of tax for voting purposes must be made at least one month before the November election, or October 4th.

IMPORTANCE OF ELECTION

The importance of the next November election can be visualized when it is considered that the following officials are to be elected:

President of the United States.

Vice-President of the United States

Members of Congress from every district in the state.

Judge of the Superior Court.

Auditor General.

State Treasurer.

State Senators from the odd-numbered districts.

Members of the General Assembly from every district.

The officers elected this year will guide your nation and state and make and administer the laws. It is your duty as a citizen not only to vote yourself, but to impress on your employes the necessity of doing likewise.

Very truly yours,

Alba B. Johnson, *President.*

OPPOSITION TO VACCINATION ON THE PART OF MEDICAL MEN

To the Editor of The Atlantic Medical Journal,
Harrisburg, Pa.

Dear Sir: A printed call for an antivaccination meeting in Pittsburgh recently was accompanied by two essays in which a number of medical men were quoted as opposed to vaccination. One of these was written by Dr. Simon Louis Katzoff and accompanied by his picture.

The Medical Directory informs us that Dr. Katzoff was born in 1890 and was licensed by Georgian College of Eclectic Medicine and Surgery in 1916. Dr. L. E. Cross of Stockton, California, who is quoted in the essay as saying "In my family I prefer smallpox to vaccination," was licensed in 1876 by the Homeopathic School. We have no other information regarding him, not even the date of his birth. The Directory informs us that Dr. Thos. Mulligan of New Britian, Conn., who speaks of vaccination as "the idea of a stupid fellow and continued by small minds," was born in 1841. Fifty-two years later he was licensed to practice medicine, but the Directory does not inform us as to what school he was graduated from. Dr. E. M. Ripley of Unionville, Conn., who believes "we have no more right to poison by vaccination than to cut throats," was born in 1847 and licensed in 1893 by the Eclectic Medical School of New York.

Comment is unnecessary.

Very truly yours,

Theodore Diller, M.D.

Pittsburgh, Pa.

Dr. O. Pine queries: Why such a hurry to send your diabetics to one who has only mastered the insulin therapy a few days ahead of you, if you would be alert?

Dr. O. Pine queries: Don't you think the world could be made safer for democracy, at least sanitarily speaking, if a portion of the aforesaid democracy could be scrubbed and scoured clean both bodily and mentally?

Dr. O. Pine queries: What is wrong with the county medical society? Why not attend the meetings, inquire, discover, protest and rectify? What can one man do? Did Socrates become mute, when on three occasions he constituted the entire minority of the Athenian Senate?

Dr. O. Pine queries: If some medicos were as hostile to the quacks in their locations as they are to their legitimate rivals, would not *le jour de gloire* of medicaldom be hastened materially?

J. NORMAN HENRY, M.D.

THE ATLANTIC
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SEPTEMBER, 1924

EDITORIALS

PRESIDENT-ELECT HENRY

The new President-Elect of the Medical Society of the State of Pennsylvania, J. Norman Henry, was born in Philadelphia on September 12, 1873. His parents were Josephine Nancrede Henry and Frederick Porteous Henry, A.M., M.D. His early education was acquired at the Episcopal Academy in Philadelphia, and St. Paul's School, Concord, N. H. He received his collegiate education at the University of Pennsylvania and his medical training, from the Medical Department of the same institution, graduating in 1895. Dr. Henry is married and has five children.

He early associated himself in practice with his father, who was a prominent physician of Philadelphia for many years. During this time he devoted his attention to internal medicine, wrote largely on such subjects and soon acquired a reputation as a skilled diagnostician. He has been attending physician to the Philadelphia General and Pennsylvania Hospitals and was for several years Clinical Profesor of Medicine in the Woman's Medical College of Pennsylvania.

When war was declared against Germany he helped to organize Base Hospital 38, and went overseas as Chief of Medical Service in it, later becoming its commanding officer. He was recommended for promotion to rank of Lt. Colonel but the war closed and he was discharged before the commission was issued.

Dr. Henry has always been fond of hunting and sports. For several years he was captain of the Germantown cricket eleven and has played in the international cricket games here and in Canada, Great Britain and Ireland.

Of late years he has devoted much time to affairs outside of medicine. He has been president of the General Alumni Society of the University of Pennsylvania for several years, and was chairman of the Committee of One Hundred. This committee acted with the Trustees in formulating the policies of the University and in selecting a Provost.

He was a founder of the Big Brother Association of Philadelphia. The object of this body is the reclamation of boys who have committed some minor crime. The court, instead of sending the boy to jail, paroles him in charge of a member who guides, advises, and acts as a big brother to the young offender. He is now a member of the Board of Directors and chairman of its Camp Committee.

He is a member of the Philadelphia County Medical Society, of which he was president in 1922; a Fellow of the American Medical Association; and a Fellow of the College of Physicians of Philadelphia. He is also a member of various Athletic and Social Clubs. H. D. J.

A MESSAGE TO HEALTHY DOCTORS

There are some physicians who take medicine —a great variety, large quantities, and have a remedy for every ill, little or big. Most physicians take none. Those who take medicine largely, treat their patients in the same way. Those who take none sometimes treat their patients in the same way, but often medicate freely and multitudinously.

There is much talk at the present day of the Periodic Health Examination. There is marked criticism of the Life Extension Institute which has apparently made this a commercial venture. It is universally recognized as a desirable thing to do, but the criticism comes because it has been commercialized—and it has been commercialized because the doctors don't do it. Some of them can't, others won't. Therefore the opportunity for commercializing. It is highly desirable that the doctors should do it: first, that they should understand how to do it; second, that the patients should realize the importance of it; and third, that the doctors should make appointments with the patients to make these periodic examinations of the apparently well.

These examinations have been endorsed by the American Medical Association and by the State Medical Society as being entirely ethical. Doctors have been urged to take the attitude towards their patients that the dentists do, sending them a little note and requesting them to appear for a general going over. Some doctors fear that this action will be regarded as unethical and that patients would consider they were commercial, rather than solicitous for their health. There can be no question of the financial profit accruing to the doctor from the general adoption of this custom. There can be even less question of the health profit accruing to the patients. It can be confidently expected that from the standpoint of dollars and cents the future doctor versed in preventive medicine, will have a larger income with a lesser strain than will he who clings to the idea that the fire is not to be put out until the smoke is so intense as to suggest that it is a real and dangerous one.

Bearing on the general problem—"Doctor, heal thyself"—there has been arranged at the State Medical Society meeting in Reading, October 7th, 8th and 9th, an examination of well doctors. Twenty of the leading physicians of the state have consented to make these examinations. Each will be made in the office of one of the doctors in Reading. The result of the examination will be entirely confidential. The doctor volunteering must think he is well. He will send his name in to Dr. Frederick L. Van Sickle, 230 State St., Harrisburg, Pa., as a volunteer. He will receive a history blank, which he will fill in, putting thereto an examination of his urine, bearing on protein, specific gravity, sugar, roughly total 24-hour quantity. He will receive an appointment from the doctor to whom he is assigned, with a given date and hour, preferably on the first day of the meeting, the street and office number being set forth.

This examination will be made at a given date and hour and thereafter the examiner and the one examined will have a brief consultation as to how the examination could be bettered, as to how the history blank could be improved, as to how best this whole subject can be put to the profession in such wise that it will be generally adopted. The one examined will have excluded, in so far as this can be done, a hidden menace to his health. He will have demonstrated a method of examination which he is free to criticize. He will get him better prepared to carry out the general policy.

The offices have been offered, the examiners have volunteered, but sufficient well doctors who believe in this and who would like to practice it have not yet volunteered. Send in your names at once, as not more than 100 will be taken and they will be considered in accordance with the time of application. Edward Martin.

TREATMENT OF BICHLORID OF MERCURY POISONING WITH CALCIUM SULPHID AS A CHEMICAL ANTIDOTE

For some years cases of bichlorid of mercury poisoning have been numerous and various methods of treatment have been employed.

No very successful method of treatment is known if the patient has taken and absorbed a very large dose. As a rule there is anuria in twenty-four or thirty-six hours which continues until the death of the patient.

Favorable results have been reported by the use of calcium sulphid. In a case reported by J. M. McCants, *U. S. Naval Medical Bull.*, 20: 572, May, 1924, the patient, a ship's cook, stated that he had taken 5 small blue antiseptic tablets for suicidal purposes, but had vomited some of them almost immediately.

The symptoms were a burning sensation in the mouth and throat, severe abdominal pain, bloody vomiting, exhaustion, cough with pains in the chest, abundant seropulent sputum, temperature 100°, some diarrhea, some erosion of the mucosa of the mouth, congested pharynx, mucous râles and general abdominal tenderness.

Five hours after the poison was taken the urine was slightly cloudy, almost colorless, had a trace of albumin, a good many hyaline and granular casts, and was acid in reaction, with a specific gravity of 1007. The diagnosis of mercuric chlorid poisoning was made at the hospital and the treatment consisted of absolute rest in bed, catharsis, egg ablumin, sodium bicarbonate, and calcium sulphid gr. X, intravenously. The calcium sulphid was given about 5 hours after the poison was taken. The next morning the urine had all the characteristics of an acute nephritis, except that the amount was not much diminished. The patient made a rapid and uneventful recovery.

This aroused considerable interest in the calcium sulphid treatment and it was determined to try this form of treatment on rabbits. Five experiments were carried out in detail which led to the following conclusions: Apparently U. S. P. calcium sulphid of the nature of that usually procured from the drug store, even though manifesting the requirements of the pharmacopeia, is of no value in the treatment of mercuric chlorid poisoning and may even be dangerous. It is believed that in many cases in which a cure by calcium sulphid treatment was reported, a fatal dose of mercuric chlorid had not been absorbed. The fact that the patient usually vomits at least a part of the bichlorid taken, and frequently receives other treatment in addition, such as gastric lavage, large amounts of water, purgation, etc., should be considered.

Even though the above experiments reflect against the calcium sulphid treatment, it is still believed that it may be valuable if one can be sure he has a good sample of the drug.

G. E. H.

CRIME

The wave of crime that has spread over the world as an after-effect of the war has not ceased. In fact it is progressing at a steady pace that it seems impossible to alter or prevent.

This crime wave is no respecter of persons. Of this we have been very forcibly reminded by two recent cases that have affected medical men of our state. Considering their exposure to all sorts of risks, the average medical practitioner has been rather free from annoyances of a dangerous character. Recently, however, the reverse seems to be true.

It is not long since a physician of Harrisburg was shot while in his office, and a woman was said to have done the shooting. It is also supposed that she committed suicide following the wounding of the physician.

A more recent case is that of Dr. Duncan L. Despard of Philadelphia, who was shot while in his office, the assassin immediately thereafter committing suicide.

It is hardly necessary here to check up on the causes or conditions surrounding these cases, but we desire to point out the dangers which attend the everyday life of the physician. We know that crime has been on the increase, and the nature of the practice of medicine makes it easy for an individual with perverted mind to seek the medical man as a victim.

What can be done about it? That is the question that the best element of society has uppermost in mind at the present time. No very valid solution seems to be forthcoming. True, greater care should be exercised on the part of all who are brought in contact with those that may become mentally unbalanced or that become possessed with the idea of persecution on the part of the physician. These persons should be more carefully watched and more police control should be exerted to prevent such crimes.

FAKE DOCTORS

In a recent issue of The Atlantic Medical Journal we called attention to a series of articles which appeared in *Collier's National Weekly*. We take this occasion to call to the notice of our readers the articles in the July and August, 1924, numbers of the *Ladies' Home Journal* under the title of "Fake Doctors." The author of these articles is Frederic F. Van de Water.

The article which appeared in the July number discussed the difficulty which the public has in discriminating between the practitioner of medicine and the fake doctor. It points out the fact that "the prefix 'Dr.' on an office shingle is all the indorsement Americans in general require of their physicians." The author recites incidents in the practice of fake doctors and describes the disastrous results which occurred to their patients. Under the term "Slaughter," he gives in plain terms the facts regarding the practice of these fake doctors in several states. "Cure-All Quacks" is another subtitle under which is discussed the attitude of the public towards the regular doctor, and the favor with which the people look upon the loud-mouthed fakes.

According to this article, the medical fraternity is not alone in this condition of quackery, for the author gives an account also of the sale of fake D.D. degrees.

Reference is made to the good work of Harry T. Brundidge, reporter for the St. Louis *Star*, in exposing the diploma mills in Missouri.

In the August number the same author deals with the conflict between the medical profession and the fakes. He calls attention to the so-called "Doctors' Trust" or "medical monopoly," and rightly points out the error in such a term and the fact that no one has been able to describe just what this "Trust" is.

Under the caption, "The Will to Believe," he discusses the gullibility of mankind in regard to the practice of the healing art.

The question is asked as to how to solve the fake and quack problem, and the answer is, "Nothing, I am afraid, except education." There can be no better answer, and the medical profession of this state is now endeavoring to carry on a program of education of the people in preventive medicine. The "Pennsylvania Plan" to remedy the condition is also discussed, and the proposed legislative measures discussed at length.

These articles should be read by every medical practitioner and their message passed on to his clientele.

THE PREVENTION OF SCARLET FEVER IS THE DUTY OF THE FAMILY PHYSICIAN

The duties of the modern physician include not only the treatment of disease, but also its prevention. As a result of laboratory and clinical research by medical scientists, many diseases which were formerly dreaded as almost inevitable visitations, are now classified as preventable. Smallpox, typhoid fever, malaria, uncinariasis, yellow fever, diphtheria, have been conquered. So well are these diseases now understood, and so definite and successful are the methods of prevention, that to-day the physician is, in a real sense, responsible when a case develops among those who rely upon him for medical advice. In fact, he is not only responsible; he is really negligent if he has not at least advised those under his care to take the proper safeguard against these preventable conditions.

In the larger cities, active and aggressive departments of health take a certain amount of this duty from the individual physician, although, of course, requiring his coöperation. On the other hand, in the smaller communities, the spread of this knowledge falls entirely upon the family physician. Particularly is this the case in regard to the diseases of children. Diphtheria is now absolutely preventable and most recently scarlet fever has been brought into the same class. This is a brilliant achievement, and should bring a sense of relief to every physician. The studies of George and Gladys Dick, of Chicago, amply confirmed by other investigators, have solved this dreaded infection and have made possible a simple method of rendering individuals immune. The benefits of this work cannot be estimated. Scarlet fever has long been a fearful specter to physicians and parents. The complications made it one of the most treacherous of children's diseases. Nephritis, acute and chronic; middle ear and mastoid infections, often left the little victims weakened and handicapped for life. This should soon be an occurrence so rare as to excite comment and even criticism.

Every child in our land should be tested and, if not naturally immune, should be immunized. There will be some parents, of course, who will refuse to allow their children to be thus treated; such are always with us, many of them honestly mistaken, but the responsibility for this should be shifted to the shoulders of the parents by the physician. It is to-day the duty of every physician to advise and urge the parents or guardians of every child he comes into professional contact with, to have them thus immunized. Failure to do this throws the responsibility upon his own shoulders.

In order properly to advise and carry out these protective procedures, he must familiarize himself with all this recent knowledge. An excellent opportunity presents itself at the Pennsylvania State Society Meeting next October, when Dr. Abraham Zingher, of the Department of Health of New York City will take up this work on scarlet fever. Dr. Zingher will not only lecture on the subject, but will illustrate his lecture with lantern slides and show by actual demonstration on children, the skin tests for diphtheria and scarlet fever immunity. Every physician not entirely familiar with this brilliant work, should take advantage of this opportunity.

The relation of the physician and the family has always been one of confidence and trust. Parents rely upon the family physician to advise them as to the proper treatment and care of their children. This naturally includes protection against disease. Can any true physician face the parent over their dying or permanently injured child, if he has not advised them as to modern methods which would have prevented such an infection?

R. R. S.

At the recent banquet tendered by the Northern Medical Society to Dr. J. Solis Cohen, of Philadelphia, Pa., the Doctor, in reminiscent mood, told of the status of medical teaching in Philadelphia a half century ago. One professer boasted that he had used the same notes for lectures for twenty years. One day he rebuked a student for tardy attendance and inquired how he expected to get through. The student replied, "I don't have to attend. I have my father's notes on your lectures."

A. C. M.

The professor, shortly after chloroform for anesthesia was introduced, objected to its use in confinement cases, overlooking the fact that Adam was put into a deep sleep when Eve was born.

This professor was also consulted by a couple from Mobile, Alabama. The wife continued sterile after several years' marriage. After treatment, when asked for the bill, the Doctor said, "Pay me fifty dollars now and if things turn out all right send me a check for fifty dollars additional when the child is born. In due time the wife had twins and he received a check for one hundred dollars. Twenty years later one of his students introduced himself as one of the twins.

A. C. M.

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

OFFICERS' DEPARTMENT

WALTER F. DONALDSON, M.D.

Secretary
8014 Jenkins Arcade Bldg.
Pittsburgh, Pa.

THE 1924 REPORTS

This year's reports under Official Transactions in this number of the Journal include, in addition to the usual reports from officers and standing committees, three which are especially interesting.

The report of the Commission on Cancer takes the unique but invaluable form of a comparison with the report made by this Commission in 1912. The report as published this year follows the same lines as that of twelve years ago, using the same questionnaire, with tabulations from the two surveys made by the same man. A perusal of this report not only conveys an answer to the question "Does it pay to educate the public regarding the dangers of cancer?", but it also specifically places the blame for delay and its dire results.

The report of the Commission on Compensation Law brings up to date the problem of properly coördinating the responsibility for the restoration of the injured employee. The findings of this Commission and its recommendations are based on months of study, and suggest plans for fair play to all concerned in compensation insurance—the injured, the employer, the public, the hospital, and the attending physician.

The report of the Committee to Confer with Morticians thoroughly covers the important subject of proper coöperation between physicians and morticians with a view to increasing the opportunities for postmortem investigation.

The volume of correspondence and the amount of energy expended in the preparation of the above-mentioned reports is unbelievable, and our gratitude to the active members of these committees should be correspondingly great. The results of their efforts bring great credit upon our Society.

The reports of the officers and standing committees are also well worthy of consideration. They should be studied in advance, and criticisms or suggestions for change in questions of administration should be presented before the 1924 House of Delegates.

CHANGES IN MEMBERSHIP OF COUNTY SOCIETIES

The following changes have been reported to August 18th:

Allegheny: *Deaths*—David R. Evans of Pittsburgh (Univ. of Pittsburgh, '99), recently, aged 49; William H. Glynn of Pittsburgh (Univ. of Pittsburgh, '02), July 31st, aged 46; J. J. Schein of Pittsburgh (Univ. of Pittsburgh, '18), recently, aged 30.

Columbia: *Death*—Luther B. Kline of Catawissa (Jeff. Med. Coll., '67), Aug. 3d, aged 82.

Erie: *Death*—William K. Andrews of Mill Village (N. Y. Univ. Med. Coll., '89), Aug. 5th, aged 57.

Greene: *Death*—Thomas B. Hill of Waynesburg (Jeff. Med. Coll., '75), July 26th, aged 80.

Indiana: *Removal*—J. Huston Johnson from East Downington to Waterman.

Jefferson: *Transfer*—A. Ray McNeil, Brookville, from Armstrong County Society.

Lackawanna: *New Member*—Stanley H. Boland, Archbald.

Montour: *Removal*—Ernest T. Williams from Danville to 141 W. 4th St., Williamsport (Lycoming Co.).

Northampton: *Removal*—William B. Smith from Bangor to 74 Fairfield Ave., Hartford, Conn.

Philadelphia: *Deaths*—Duncan L. Despard (Jeff. Med. Coll., '01), suddenly, Aug. 5th, aged 56; Robert G. LeConte (Univ. of Penna., '88), suddenly, Aug. 6th, aged 58; George A. Piersol (Univ. of Penna., '77), Aug. 7th, aged 68.

York: *Removal*—John C. Noss from York Haven to 1411½ Twelfth Ave., Altoona (Blair Co.); *Death*—George B. Perry, Brogueville, July 31st.

PAYMENT OF PER CAPITA ASSESSMENT

The following payment of per capita assessment has been received since July 22d. Figures in first column indicate county society number; second column, State Society numbers:

July 22	Bedford	16	7250	$5.00
25	Franklin	52	7251	5.00
29	Lackawanna	146	7252	5.00

FREDERICK L. VAN SICKLE, M.D.
Executive Secretary
230 State St., Harrisburg, Pa.

THE MEMBERSHIP LIST FOR 1924

The completed list of members of the Medical Society of the State of Pennsylvania in good standing July 31, 1924, has been compiled and now may be obtained in printed form.

Prior to 1923 this list was published in the Journal, under the Official Transactions of the Society, but for 1923 and 1924 it has been found more satisfactory to print it under a separate cover.

These lists may be obtained from the office of the secretary, Walter F. Donaldson, M.D., 8014 Jenkins Arcade, Pittsburgh, Pa., or from the Atlantic Medical Journal, 230 State St., Harrisburg, Pa.

There will be no charge to members of the State Society for this list, a copy being sent promptly upon request, giving name, address, and county of membership. The price to non-members is $2.00.

PHYSICAL EXAMINATIONS AT THE READING SESSION

Elsewhere in this issue of the Journal will be found a communication which was sent to the county medical society secretaries, calling their attention to the arrangements made by the Commitee on Public Relations of the State Society for the Reading session.

The arrangements as provided by this Committee have been under way for some months. The plan is that any physician who feels himself physically fit but desires to prove the same through a physical examination, may make application to have such examination made at the Reading session.

We trust that this communication from the Committee will not be overlooked and that more than the 100 applications will be received in sufficient time to have them listed and the applicants notified as to the time and place of their examination.

Don't forget that the Annual Session of the Medical Society of the State of Pennsylvania will be held in Reading (Berks County), Pa., beginning October 6th and continuing until the 9th, inclusive.

ENTERS THE "NEUROCALOMETER"

Probably most of those who have made a study of quackery and pseudomedicine have reached the conclusion that charlatanry of the mechanico-electrical type had reached its apotheosis in Abrams' fantastic pieces of apparatus. But chiropractic has gone the E. R. A. one better, and presents to a palpitating world the "Neurocalometer"—a measurer of nerve heat! This marvel, as is fitting, emanates from the Fountain Head of Chiropractic—the Palmer School of Chiropractic, Davenport, Iowa. Chiropractors are being circularized, their interest whetted, and they are urged to send in their orders early. The description given of the device is rather hazy, but the Neurocalometer appears to be essentially a thermopile or possibly two thermopiles, one in each arm of the instrument. The two arms are, apparently, separated sufficiently to allow them to "straddle" the vertebral column. From the thermopile run wires which carry the weak electric current (always generated when a thermopile is subjected to differences in temperature) to a galvanometer. The latter, presumably, can be brought around so that the victim can see the pointer move over the dial. When the pointer stands at zero, it indicates a perfectly normal spinal column; when it swings to the right or left it is registering a "subluxation"! The economic possibilities of this device are surely unlimited. The thermopile part of the instrument is said to be made at the Palmer School of Chiropractic. Like Abrams' "Oscilloclast," the Neurocalometer cannot be purchased; it can only be leased. Like the Oscilloclast, too, it is sealed and the lessee signs a contract not to break or tamper with the seals. The "established price" of a lease of the Neurocalometer is $2,200—$1,000 cash at the time the contract is made and $10 a month for ten years. This makes Abrams' disciples look like pikers. As a special "introductory price," operative until July 1, 1924, these instruments will be leased for $1.200, in which $600 cash must be paid at the time of signing the contract and $5 a month paid for a period of ten years. After July 1, 1924, it will be $750 cash and $6.25 a month for ten years. There are numerous restrictions imposed on those who would lease this device, of which the least onerous is that requiring the lessee to charge his patient $10 for a Neurocalometer reading. It is necessary for the would-be lessee to declare what degrees he holds, from what school or schools he graduated, and whether his degrees and graduation were from "residential" or "correspondence" courses. No other college of chiropractic will be able to lease a Neurocalometer for class instruction, and, as a further means of boosting attendance at the Palmer "School," those who are considering taking up chiropractic as a trade are told that if they matriculate or enroll in any school except the Palmer School on or before Sept, 1, 1924, they will not be eligible to lease a Neurocalometer. The Palmer School of Chiropractic says that while the Neurocalometer "will not give electronic reactions of syphilis from the blood of a chicken," it "proves hot boxes." Altogether, the Neurocalometer should come up to the fondest expectations of its sponsors. It will be a great business getter for the Palmer School of Chiropractic; it will bring in a handsome income to that institution and to the chiropractors that rent the device. And the ever gullible public will pay the bill.—*Jour. A. M. A.*, July 12, 1924.

Dr. O. Pine queries: What disposition shall a long suffering profession make of the usurping nurses, social workers, welfare busybodies, and other lay meddlers who wedge us out of our cases and assume charge of them?

APROPOS THE READING SESSION

THE PROGRAM

In the August Journal the completed program for the Reading Meeting of the Society, October 6, 7, 8 and 9, 1924, was printed and you were asked to look over it carefully, mark the subjects that were of special interest to you, and then decide to attend the Meeting. In each of the General Session and Section Meetings there are some special features to which we wish to call your attention.

GENERAL SESSIONS

Tuesday, 10 A. M.

Dr. J. Norman Henry will deliver his address as President of this Society, to be followed by an address by Dr. William Allen Pusey, Chicago, President of the American Medical Association. The Board of Trustees were most fortunate in securing Dr. Pusey to address us, and he has also consented to read a paper in the Medical Section in the afternoon on "The Present Situation in the Treatment of Syphilis." In the evening he will attend the dinner of the Secretaries of the Component County Societies and address them. Surely he has been most generous in offering his services and helping us to make the meeting a success.

Wednesday, 9 A. M.

The titles of the first four papers are: "Postoperative Pulmonary Complications;" "The Abuse of Tuberculin as a Therapeutic Agent;" "Relation of Dermatology to Internal Medicine;" and "Reconstruction of the Hip Joint." Following the reading of these papers we come to the symposium of the morning: "Hemorrhages from the Uterus," with papers on "Hemorrhages of Pregnancy," illustrated with slides;" "Uterine Hemorrhage," with lantern slides, by Prof. John Osborn Polak, Brooklyn; and a paper on "Associated Eye Conditions."

Thursday, 2 P. M.

The State Department of Health will present three subjects, each five minutes long, namely: "Milk Control in Pennsylvania;" "Report of a Large Number of Cases of Anterior Poliomyelitis in Two Families;" and "Pneumonia as a Principal and Contributory Cause of Death." Dr. Chevalier Jackson, of Philadelphia, will give a chalk talk and lantern demonstration entitled, "Observations Based on Over One Hundred Cases of Arachidic (Peanut) Bronchitis. Following this talk, Dr. William Engelbach, of St. Louis, Mo., will bring, by invitation, a message of hope and courage for the "Fat Boys," when he exhibits his slides in "Studies of Endocrine Adiposity." It is well for us to see ourselves as others see us, so kindly weigh in before attending this meeting of the session and see if you fit in the picture.

The "Symposium on Acute Pancreatitis" will bring this session to a close and end the scientific meetings of the Society for this year. If you have not had any experience in diagnosing or operating on these cases, or given much thought to the subject, you cannot afford to remain away. The "Etiological Factors," "Medical Aspects," and "Surgery" will be ably handled by Drs. Landon, of Pittsburgh, and Thomas McCrae and John B. Deaver, of Philadelphia. When, what and how is the message they hope to leave with you? Ask yourself, "Can I diagnose a case of acute pancreatitis? What should I do, and how should it be done?" If you can't answer these questions, how can you fail to attend the Thursday afternoon session? These men will answer them for you.

Life is so uncertain that while we may be able to attend the Reading Session this year, we may not be here next year to attend any more meetings of the State Society, so let us not not pass by, *Deo Volente*, this meeting at Reading, October 6th to 9th.

SECTION ON MEDICINE

Tuesday, 2 P. M.

The opening paper will be an address by the Chairman of the Section, which will be followed by one on "Some Factors Influencing the Expectancy in Mitral Stenosis." Dr. William Allen Pusey, Chicago, President of the American Medical Association, has

OUR GUESTS AT READING

General Sessions

William Allen Pusey, M.D., Chicago, although specializing in dermatology, has exhibited an unusual grasp of the problems in the broad field of medical practice. For years a leading spirit in medical organization work, a widely known author on medical subjects, and holding a number of important appointments, we regard ourselves as particularly fortunate in having Dr. Pusey, now President of the American Medical Association, at our session. He will address the Society Tuesday morning, read a paper in the Medical Section in the afternoon, and attend the dinner of the Secretaries' Conference in the evening.

John Osborn Polak, M.D., Brooklyn, N. Y., has been Professor of Obstetrics and Gynecology of the Long Island College Hospital for many years. He has contributed many scientific articles on obstetrics and gynecology and is one of the leading men of the country in this field of work. He is celebrated for his careful study and analysis of postoperative results. His interest in this much neglected field has been a wonderful inspiration to all concerned. He has always been interested in research and this has been a constant stimulus to his coworkers.

William Engelbach, M.D., St. Louis, Mo., is the author of numerous articles on endocrine subjects. He held the position of Professor of Medicine in the St. Louis University School of Medicine from 1911 to 1924, also the positions of President of the St. Louis Medical Society in 1918, former Chief of Staff at St. John's Hospital, St. Louis, and President of the Association for the Study of Internal Secretions in 1923, in which capacity he took an active interest in developments in the field of endocrinology. He has made a number of important contributions on this subject, and his more recent studies have been directed to the osseous development in endocrine disorders. He will present an interesting discussion on "Studies of Endocrine Adiposity."

most kindly consented to read a paper on "The Present Situation in the Treatment of Syphilis." He is attending the meeting of the Society as the guest of the Board of Trustees. If you are interested in the subject of his paper, don't fail to be present, for he speaks with authority. "The Therapeutic Value of a Complete Physical Examination" is a most timely subject in which we are all interested. Following this paper are three more: "The Treatment of Headache," "Parasitic Infections of the Lung," and "Concerning the Sudden Onset of Symptoms in Brain Tumors, with Report of Illustrative Cases" and lantern demonstration.

Wednesday, 2 P. M.

The first paper of the afternoon — "The Nonspecific Protein Reaction as an Adjuvant to Endocrine Therapy"—will be followed by a Symposium on Typhoid Fever. Since measures have been instituted to eradicate this disease, each year it is increasingly difficult to show the senior students in the medical schools a case of typhoid fever, with the result that the recent graduates are better prepared to handle any other type of case. The request for this symposium, coming from the younger men in the profession, could not be denied them, so the Program Committee has arranged to have the subject thoroughly covered by three papers, namely: "Clinical Course and Diagnosis," "Treatment," and "The Control by Public Health Measures." The Section officers are desirous that the Typhoid Symposium be freely discussed. Kindly make your discussion short and snappy. The two concluding papers of the Wednesday afternoon session are: "The Treatment of Diabetes in Private Practice" and "The Use of the Roentgen Ray in the Diagnosis of Chest Conditions."

Thursday, 9 A. M.

"Gastric Hyperacidity; Its History and Present Status," "Functional Cardiac Disorders" and "The Early Stages of Cardiovascular Degeneration; Comments on Diagnosis and Treatment" are the first three papers of the morning. "The Surgical Treatment of Sciatica" and "Chronic Bronchitis" are the two papers that follow. We then come to the consideration of "The Systemic Nature of Chronic Infectious Arthritis" by Dr. P. S. Hench, Rochester, Minn., who will be with us by invitation. Dr. Hench will bring us a message from the Mayo Foundation. The last paper will be by Dr. A. Zingher, New York, who is Assistant Director of the Department of Health of New York City, on "The Dick Test and Active Immunization with Scarlet Fever Toxin." There will be a demonstration of the Dick Reaction, with lantern slides, and the differentiation between positive and pseudo-reactions in both the Dick test and the Schick test will be shown on a group of children.

SECTION ON SURGERY

Tuesday, 2 P. M.

The address by the Chairman will be followed by "Methods of Reconstructing the Defective Anterior Abdominal Wall," "A Series of Unsuccessful Prostatectomies," and "Suprapubic Prostatectomy in Bad Surgical Risks." "Surgery's Present Conception of the Clinical Value of Serums and Vaccines in the Treatment of Surgical Infections" should bring out a lively discussion. "Treatment of Chronic Suppurative Osteomyelitis" with lantern demonstration will bring the afternoon session to a close.

Wednesday, 2 P. M.

"Surgery in Diabetics" and "Ethylene as an Anesthetic — Its Scope and Limitations" are the two papers to be presented before we come to the Symposium of the afternoon on Local Anesthesia, of which the first paper is "Equipment and Technique for the Use of Local Anesthesia" with a lantern demonstration, presented by invitation by Dr. Robert Emmett Farr, of Minneapolis, Minn. Dr. Farr has kindly consented to exhibit his moving pictures Tuesday or Wednesday afternoon from 5 to 6 o'clock, following the afternoon meeting, as he expects to spend three days attending the Session. The Section Officers will keep you informed of the time and date. Following Dr. Farr we will have "Local Anesthesia in Surgery of the Neck," "Local Anesthesia in Surgery of the Abdominal Wall and Cavity," and "Local Anesthesia in Surgery of the Extremities" completes the symposium.

OUR GUESTS AT READING

Medical Section

Thomas B. Futcher, M.D., Baltimore, Md., who will read the paper on the "Diagnosis and Clinical Course of Typhoid Fever," in the Typhoid Symposium, Wednesday afternoon, is Associate Professor of Clinical Medicine at the Johns Hopkins Medical School. Dr. Futcher, who was graduated from the University of Toronto in 1893, has occupied a prominent position in the Johns Hopkins Hospital and Medical School since 1894. His long and intimate association with Osler and Thayer throughout those years when typhoid fever was so prevalent in Baltimore has given him an exceptional clinical knowledge of this disease.

P. S. Hench, M.D., Rochester, Minn., will read a paper on "Chronic Arthritis" on Thursday morning. Dr. Hench is associated with the Medical Service of the Mayo Clinic, and his original researches on the estimation of urea in the saliva have demonstrated his unusual ability in original thought and study. Dr. Hench is a native of Pittsburgh, his father being a well-known educator of that city. He graduated from the University of Pittsburgh, and spent a year at St. Francis Hospital, Pittsburgh, before becoming associated with the Mayo Clinic.

Abraham Zingher, M.D., New York, will read, on Thursday morning, a paper on "The Dick Test and Active Immunization with Scarlet Fever Toxin." Dr. Zingher is the Assistant Director of the Department of Health of New York City. He is a graduate of Cornell University Medical School, 1908. The work of the New York City Department of Health in the protection of school children against contagious diseases is epoch making. Dr. Zingher has taken a very active part in this work, and no one is better qualified to present the technique and results of the immunization against scarlet fever. He will show by actual presentation of a group of children, the Dick and Schick tests. He is a brilliant speaker and his presentation of this dramatic work will be of value to every physician.

Thursday, 9 A. M.

"Certain Aspects of the Treatment of Acute Appendicitis" and "Carcinoma of the Rectosigmoid" are the first two papers, followed by the Symposium on Intestinal Obstruction: "Intestinal Obstruction in Children," "Acute Intestinal Obstruction," and "Postoperative Intestinal Obstruction." Dr. John F. Erdman, of New York City, has been invited to present the last paper, bringing to a close the meetings of the Surgical Section for 1924.

A most distressing case came to the attention of the writer but a few weeks ago. An aged couple of 72 and 76 years went to the station to see and say good-bye to their only means of support — their daughter, was leaving on her vacation to visit some friends in an eastern city. The day she arrived she was seized with violent abdominal cramps. A physician who attended her for three days, trying to get the bowels to move with all kinds of purgatives, finally decided to call a surgeon in consultation. The surgeon promptly diagnosed the case as one of acute intestinal obstruction. She was removed to a hospital and the gut was found to be gangrenous and had perforated. The grief and sorrow of her parents when they received the news of her death was pitiable. If that doctor could only see the grief that was caused in that home by this tragedy, he would take an aeroplane to Reading before he would miss this Symposium on Intestinal Obstruction.

SECTION ON EYE, EAR, NOSE AND THROAT DISEASES

Tuesday, 2 P. M.

An address by the Chairman will be followed by papers on the eye: "Combined Excision of the Tarsus in Trachoma;" "Ocular Anomalies and Their Clinical Significance;" "Nonsurgical Treatment of Dacryocystic Blennorrhea;" "On Treatment of Interstitial Keratitis;" and "Bullous Keratitis and Its Relation to Sinus Disease." A paper on "Sphenopalatine Ganglion Neurosis" will end the first session of this Section.

Wednesday, 2 P. M.

Dr. Ben Witt Key, of New York City, will present by invitation, a paper on "The Practical Application of Foreign Protein Injections in Ocular Infections." Then will come the Symposium on Syphilitic Manifestations of the Eye, Ear, Nose, Throat and Larynx. "Chronic Otorrhea with Special Reference to Conservative Treatment in a Series of One Hundred Thirty Cases" will follow the symposium.

Thursday, 9 A. M.

"Bacteriological Analysis of Acute Mastoid Disease. Analytical Report of One Year's Mastoid Operations" is the first paper of the morning. "The More Fundamental Causes of Hay Fever," "The Treatment of Nonsuppurative Deafness," "The Influence of Focal Infections on the Acoustic Nerve and Its End Organ," "The Nose, Throat and Larynx in Thyroid Disease," and "Cerebellar Abscess. Report of an Interesting Case, with Description of Therapy as Practiced by Professor Torok, of Budapest," will close the Section meetings for the year.

SECTION ON PEDIATRICS

Tuesday, 2 P. M.

The Chairman's address will be followed by "Atypical Occurrence of Physical Signs in a Case of Lobar Pneumonia," "Relation of Baby Welfare Work to the Physician," "Congenital Luxated Hip," "Preliminary Report of a Study of Infant Mortality in a Certain Community," and "Suppurative Pericarditis in Children."

Wednesday, 2 P. M.

"Treatment of Subacute and Chronic Bronchitis in Childhood," "The Diagnosis and Treatment of Enlarged Thymus" with lantern demonstration, and "Hydronephrosis in Childhood." Report of Case will be discussed before the invited guest, Dr. John A. Foote, of Washington, D. C., presents his paper on "An Adynamic Type of Peritonitis Seen in Debilitated Infants and Children." Two papers on "Fat; Its Advantages and Disadvantages in Infant Feeding" and "Nephritis in Childhood" bring the afternoon session to a close.

Thursday, 9 A. M.

The first two papers are "Congenital Syphilis" and "Paranasal Sinusitis in Children." Dr. Charles Hendee

OUR GUESTS AT READING

Surgical Section

John Frederick Erdman, M.D., of New York City, is one of the most eminent of American surgeons. A native of Cincinnati, he was graduated from Bellevue Hospital Medical College, New York, in 1887, and has practiced in New York City continuously since that date. No field of surgery has been left untouched by him. He was Professor of Practical Anatomy in New York University from 1895 to 1900, Professor of Surgery in the University and Bellevue Hospital Medical College from 1895 to 1908, has been Professor of Surgery in the New York Postgraduate Medical School since 1908, and is the Director of Surgery in the same institution. He is Attending Surgeon to the Postgraduate Hospital, and Consulting Surgeon to Gouverneur, Nassau, Mt. Vernon and St. John's Riverside Hospitals, New York, and to the Greenwich, Conn., General Hospital. The Society is indeed fortunate in having this distinguished surgeon on this year's program.

Robert Emmett Farr, M.D., of Minneapolis, Minn., is one of the best known authorities on local anesthesia, and has written a splendid textbook on this subject. He was graduated from Rush Medical College in 1900 and was associated with Dr. James H. Dunn, who was head of the Surgical Department of the University of Minnesota for four years. He taught in the Surgical Department of this University until 1914, at which time he resigned. Since then he has confined his work to private practice and research work. He will read a paper on "Armamentarium and Technique in Local Anesthesia" in the Symposium on Local Anesthesia, and it has been arranged to exhibit his very fine and unusual set of motion pictures between 5 and 6 p. m., following the Section meeting on Tuesday or Wednesday. Definite information will be given during the section meeting.

Smith, of New York City, by invitation, will then entertain the section with a paper on "Diagnosis of Tuberculosis in Children" with a lantern demonstration. The three concluding papers are "Acute Infections of the Middle Ear in Children," "A Statistical Study of St. Vitus' Dance" and "Supervision of the Dairy Herd is Necessary to Prevent Some Anaphylactic Symptoms in Infant Feeding."

If you have read the program in the August and September numbers of the Journal, can you honestly afford to miss the Reading Meeting of the Medical Society of the State of Pennsylvania, October 6 to 9, 1924?
T. G. Simonton, *Chairman, Committee on Scientific Work.*

OUR GUESTS AT READING

Pediatric Section

Charles Hendee Smith, M.D., of New York, is one of the leaders of pediatric thought, and is Clinical Professor of Diseases of Children in Columbia University College of Physicians and Surgeons, New York City. His paper on the "Diagnosis of Tuberculosis in Children" is a most important one indeed, and the section meeting room should be filled to overflowing to hear it.

John A. Foote, M.D., of Washington, D. C., will present a paper on "Peritonitis in Debilitated Infants and Children." Dr. Foote is a native of Lackawanna County, Pennsylvania, and is now the head of the Department of Pediatrics in the Georgetown University School of Medicine. He is widely recognized as one of the outstanding figures in diseases of children.

Eye, Ear, Nose and Throat Section

Ben Witt Key, M.D., of New York City, is a graduate of the University of Pennsylvania, Class of 1909. He has always practiced in New York where he is connected with the New York Eye and Ear Infirmary, French Hospital and Bellevue Medical College. He is a Fellow of the American College of Surgeons, New York Ophthalmological Society, American Ophthalmological Society and the American Academy of Ophthalmology and Otolaryngology. Dr. Key has been a frequent contributor to medical literature on his specialty. He has had a wide experimental and clinical experience and his work on vaccine and protein injections in ophthalmic infections has been most exhaustive. It is on this latter subject that Dr. Key is to address the Section.

"MEDICAL HALL," READING, PA.

THE HOME OF THE BERKS COUNTY SOCIETY

About a decade ago, the Berks County Medical Society acquired ownership and possession of a desirable building, centrally located in the City of Reading, to which the name of Medical Hall was given at the time of its dedication. In this building our Society holds its stated monthly meetings; its library is permanently located here and it is further used and occupied by allied scientific activities including the Reading Dental Society, the University Club, the Visiting Nurses' Association of Reading and the Staff meetings of the Reading Hospital.

In view of the approaching convention of the State Medical Society in Reading, during the first week of the month of October, it is the purpose of this brief communication to acquaint our friends and guests who expect to attend the sessions, with the fact that this building will be open for their use during the entire week and a cordial invitation is extended to all who visit us to make use of the conveniences which the building may present.

Incidentally, a brief history of events leading up to the purchase of this property may be of interest. The Berks County Medical Society is celebrating its centennial anniversary this year, having been organized on the 7th day of August, 1824, by a group of local physicians who styled themselves the "Medical Faculty of Berks County." Their first meeting was held in the town hall of the borough of Reading and an admirable address, delivered by the new president upon assuming the duties of his office, is preserved in full down to the present day. The records of the Society do not state how long this organization continued to meet in the borough hall, but frequent references are made to changes in location from one place to another, the public hall, physicians' offices, library building, dispensary rooms and later in hospital wards until the wanderings of the Society appear to have been almost fugitive in character.

In more recent periods the necessity for a permanent meeting place appeared so urgent and obvious that a strong desire for a home of our own was kindled among our members, and this sentiment continued to grow in strength as the years progressed until tangible results eventually followed. The first movement in this direction was launched on February, 8, 1910, in the presentation of a paper by a member entitled "A Look into the Future—A New Home for the Berks County Medical

Society." The paper resulted in the appointment of a committee of seven members to look into the matter, the reader of the paper becoming its chairman. The committee was subsequently known as the "New Home Committee." Numerous meetings were held during the summer months of that year and several sites that seemed to be suitable for a "Home" were inspected; but the committee believed the time for the purchase of a building to be inopportune, consequently rendering an adverse report to the Society, and the subject was indefinitely postponed.

The following year—1911—through the personal effort and influence of the presiding officer of the Society, a very generous and unexpected offer of assistance was received from a public spirited citizen which again revived interest, with the prospect of ultimate success. In brief, the offer extended the privilege of selecting any building in the city thought suitable for our requirements, the half of which expense was to be assumed by our benefactor and the remaining half by the Society. After further conference and inspections, the present building, located at 429 Walnut St., was selected, the action of the committee officially ratified on December 11, 1911, and the campaign for funds was then speedily set in motion.

The Home of the Berks County Society

No difficulty was experienced in procuring subscriptions for the amount required. During the following three years all obligations were paid, some structural alterations completed and the "Hall" finally dedicated on April 13, 1915, with full title vested in the Society. The exercises on that day were memorable and impressive. Distinguished guests were present from all sections of the state and extended their congratulations and felicitations on our good fortune. The addresses of the respective speakers were full of expressions of good will and joy in the consummation of our cherished hope, and the attendance was largely in excess of the capacity of our assembly hall.

A word about the building itself may be appropriate. It was originally built as a private residence at an approximate cost of $40,000 and has a frontage of nearly eighty feet on Walnut Street in the heart of the city. It is consequently an excellent site for the erection of a modern structure when this is required to meet the needs of our increasing activities. This thought is already a frequently expressed and cherished vision and will no doubt become a reality when in time we will have outgrown our present quarters.

Meanwhile we are happy in the knowledge that we possess our present home, which is roomy and comfortable, and is functioning on a sound financial basis. Our visitors and guests who are coming to the meeting of the State Society are again cordially invited to call and make themselves at home within its walls. Its location, 429 Walnut St., is easy of access, within two squares of Rajah Temple, where the sessions will be held. The members of the Berks County Society hope to greet many friends here during Convention week.

C. W. Bachman, M.D.

Reading, Pa.

HOTEL ACCOMMODATIONS FOR THE SESSION

The city of Reading is particularly well situated for the holding of conventions. In recent years many conventions of such organizations as the Rotarians, Kiwanians, and Shriners, have been held there. The hotel facilities have proved adequate and it is believed that sufficient accommodations will be available for all the doctors during the meeting in October. The list of the hotels and their rates is appended.

In the mountains at Wernersville, which is about seven miles distant from Reading, are located Galen Hall, Grand View Sanatorium, and South Mountain Manor. Those physicians who will motor to the convention in Reading will find these hotels particularly delightful because the road between Wernersville and Reading is excellent and the hotel accommodations are first class. The mountains at Wernersville are very attractive and have for years been very widely known as health resorts. It is hardly necessary to add that accommodations should be booked at these hotels as early as possible so that desirable reservations may be secured.

The following hotels are centrally located in the city of Reading:

Berkshire, 276 rooms, European plan. With private bath: single rooms, $3.50 to $5.00; double rooms, $5.00 to $8.00; with twin beds, $7.00 to $8.00. Without private bath: single rooms, $2.60 to $3.00; double rooms, $4.00 to $5.00; with twin beds, $5.50.

Mansion, 90 rooms, European plan. With private bath: single rooms, $3.00 to $3.50; double rooms, $6.00 to $7.00. Without private bath: single rooms, $2.00 to $2.50; double rooms, $4.00 to $5.00.

American, 110 rooms, American plan. With private bath: double rooms, $5.50. Without private bath: double rooms, $4.50.

Penn, 125 rooms, European plan. With private bath: single rooms $2.50 to $3.00; double rooms, $4.00 to $5.00. Without private bath: single rooms, $1.50 to $2.00; double rooms, $2.50 to $3.00.

Tourists, 75 rooms, European plan. Without private bath, but with running water: single rooms, $1.50; double rooms, $2.50. Without running water: single rooms, $1.25; double rooms, $2.00. With running water: 4 in room—2 beds—$4.00.

Belmont (men only). With private bath: single rooms, $3.00. double rooms, $5.00. Without private bath: single rooms, $2.00; double rooms, $3.50.

Merchants, 50 rooms, American plan. Price $3.00 to $3.75.

The following hotels are located at Wernersville, in the mountains about 7 miles from Reading, and connected with the city by an excellent road:

Grand View, American plan. Price, $5.00.

Galen Hall, American plan. Price, $7.00 to $10.00.

South Mountain Manor, American Plan. See advertisement on page xxi of this issue for illustration and description. With private bath: single rooms, $8.00, $9.00, $10.00. Without bath but with running hot and cold water: $6.00, $7.00, $8.00.

READING GARAGES

The Zimmerman Leahy Co., Court and Poplar Sts. Capacity of 200 cars. Rate 50c per day.

Heydt, two garages, 147 N. 5th St. and rear of 151 N. 5th St. Capacity of 150 cars. Rate 75c. Charge for washing car, $1.50 to $2.50.

Pennsylvania, 208 Madison Ave. Capacity of 75 cars. Rate 75c. Washing car $1.50 to $2.50. Open day and night.

Tourist's, 6th and Cherry Sts. Capacity of 50 cars. Rate 50c per day.

Gross, 514 Cherry St. Capacity of 50 cars. Rate 50c per day.

Eisenbrown, 6th and Elm Sts., two garages. Capacity of 35 cars. Rate 75c per day. Washing car $1.50 to $2.00.

Berkshire, rear of 116 N. 5th St. Capacity of 25 to 30 cars. Rate $1.00 per day. Washing car $1.50 to $2.00. (3 to 5 rooms with showers at $1.75 per day.)

Capitol, 4th and Courts Sts., entrance on Court St. Capacity of 25 cars. Day rate 50c; 24 hours, $1.00.

Franklin, 7th and Franklin Sts. Capacity of 25 cars. Day rate 50c; 24 hours 75c.

Merchants Auto Service, Court and Cedar Sts. Capacity of 20 cars. Rate 75c per day. Washing car $1.50 to $2.00.

J. Miller Kalbach, 124 S. 5th St. Capacity of 15 to 20 cars. Rate for 4 hours 25c; 8 hours 50c; 24 hours $1.00.

Croessant, 1050 Greenwich St. Capacity of 40 cars. $1.00 per night. $3.50 per week.

Crisswell, 233-237 N. 11th St. Capacity of 50 cars. Rates 75c to $1.00. $3.00 per week. Repair work done.

SCIENTIFIC EXHIBITS

The Scientific Exhibits have been assigned space on the second floor mezzanine. All those who desire to participate should get in touch promptly with Dr. John E. Livingood, Secretary of the Berks County Medical Society, 249 North Fifth Street, Reading, Pa. Arrangements for building of shelving, etc., can be made with the exhibit contractor, Hen. Johnston, Inc., 645 Penn St., Reading, Pa., this to be at the expense of the exhibitor.

It is hoped that sufficient scientific exhibitors will take part to make this display a valuable feature of the meeting.

COMMERCIAL EXHIBITS

The usual high class of exhibitors will take part in the Commercial Exhibit which will occupy the main floor and the first floor mezzanine. Seventy-five booths will be constructed, most of which have been reserved at this time. A few spaces still remain open, but application for these should not be delayed. Address all communications regarding this exhibit to Frederick L. Van Sickle, Manager of Sessions and Exhibits, 230 State St., Harrisburg, Pa.

CLINICS AND ENTERTAINMENTS

The detailed program of clinics and entertainments will be published in the Bulletin of the Berks County Medical Society, which will be distributed from the Registration Desk. The following preliminary announcements give evidence that the social side of the Convention will be well taken care of by our Berks County hosts.

MONDAY AND FRIDAY, OCTOBER 6 AND 10

Visiting physicians are cordially invited to visit the Reading Hospital and St. Joseph's Hospital on Monday and Friday. No clinics will be held Tuesday, Wednesday and Thursday on account of the sessions of the State Society. Arrangements have been made with both hospitals to extend to all the visiting physicians the privileges of inspection of all the departments of the hospitals.

TUESDAY, OCTOBER 7

The Jefferson Medical College Alumni Luncheon will be held at the Berkshire Hotel at 12:30 P. M. Tickets will be on sale at the Registration Desk for $1.00.

The Secretaries' Conference and dinner will be held at 5:00 P. M., at the Wyomissing Club, 5th and Walnut Sts.

A Smoker and Vaudeville will be held at 8:15 P. M., at the Rajah Temple, and simultaneously there will be a theatre party at the Orpheum Theater for visiting ladies. Tickets should be secured at the Registration Desk.

WEDNESDAY, OCTOBER 8

The entertainment of the morning will be a motor trip to interesting points near Reading, arriving at the Berkshire Knitting Mills, Wyomissing, for inspection and luncheon.

In the afternoon there will be a tea and reception at the Woman's Club, 140 N. 5th St.

The evening entertainment will be the President's Reception and Ball, in Rajah Temple, at 9:00 P. M.

THURSDAY, OCTOBER 9

In the afternoon a motor trip to Wernersville Mountain Resorts and the South Mountain Asylum will be enjoyed. Tea will be served at the Asylum.

The usual Public Meeting will be held in the evening at Rajah Temple. The following eminent speakers have been secured for this meeting, and it will be well worth staying over for: Dr. Chevalier Jackson will speak on "The Prevention of Certain Classes of Accidents in Children," and Dr. Woods Hutchinson will speak on "Making Health Contagious."

PROGRAM

NINETEENTH ANNUAL CONFERENCE OF SECRETARIES

Tuesday, October 7, 1924, at 5:00 P. M.

At the Wyomissing Club, Fifth and Walnut Streets, Reading.

Chairman—John E. Livingood, Secretary, Berks County Medical Society.

Secretary—M. Edith MacBride, Secretary, Mercer County Medical Society.

THE PROPER FINANCING OF THE COUNTY MEDICAL SOCIETY.

W. Horace Means, Secretary, Lebanon County Medical Society.

Discussion opened by William H. Mayer, Secretary, Allegheny County Medical Society.

THE DESIRED RATIO BETWEEN THE NUMBER OF ELIGIBLE NONMEMBERS IN A COUNTY AND THE NUMBER OF MEMBERS IN A COUNTY MEDICAL SOCIETY, AND HOW TO MAINTAIN IT.

Henry G. Munson, Secretary, Philadelphia County Medical Society.

Discussion opened by Arthur B. Fleming, Secretary, Schuylkill County Medical Society.

SUGGESTIONS FOR INCREASING THE ATTENDANCE AT MEETINGS OF THE COUNTY MEDICAL SOCIETY.

Walter S. Brenholtz, Secretary, Lycoming County Medical Society.

Discussion opened by Charles P. Stahr, Secretary, Lancaster County Medical Society.

THE PROPER PROPORTION, THROUGHOUT THE YEAR, OF SCIENTIFIC, ECONOMIC AND SOCIAL SUBJECTS FOR A SUCCESSFUL COUNTY MEDICAL SOCIETY PROGRAM.

Joseph J. Meyer, Secretary, Cambria County Medical Society.

Discussion opened by Joseph Scattergood, Secretary, Chester County Medical Society.

THE LIAISON BETWEEN THE COMMITTEE ON PUBLIC RELATIONS OF THE STATE MEDICAL SOCIETY AND ITS MEMBERS.

Edward Martin, Chairman, Committee on Public Relations.

GREETINGS—William Allen Pusey, Chicago, President of the American Medical Association.

Dinner at 6:45 P. M. Component Society Secretaries, officers of the State Society and members of the Board of Trustees, $1.00 per plate. Other members of the State Society will be welcome at $2.00 per plate. Dinner reservations should be made at the Registration Desk before 3:00 P. M., Tuesday, October 7, 1924.

PENNSYLVANIA NEWS ITEMS

DEATHS

Dr. Thomas Benton Hill, of Waynesburg, a graduate of Jefferson Medical College of Philadelphia, class of 1875, died on July 25th, aged 80 years.

Dr. Walter Lowa, of Philadelphia, who was graduated from the University of Pennsylvania School of Medicine in 1899, died on August 15th at his home.

Dr. J. Jay Schein, of Pittsburgh, died recently. Dr. Schein was born in 1894, and was graduated from the University of Pittsburgh School of Medicine in 1918.

Dr. William K. Andrews, of Mill Village, who was born in 1867, and was graduated from the New York University Medical College in 1889, died on August 5th.

Dr. Ralph Ross Jordan, of Du Bois, a graduate of the University of Pennsylvania School of Medicine, Philadelphia, class of 1903, died on July 31st of nephritis, aged 51 years.

Dr. John C. Russell, of Warren, who was born in 1859, died recently. He was graduated from Western Reserve University School of Medicine, Cleveland, Ohio, in 1884.

Dr. George B. Perry, of Brogueville, who was born in 1864, died recently from a complication of diseases. He was a graduate of the University of Pennsylvania School of Medicine, Philadelphia, class of 1896, and formerly practiced at Pittston.

Dr. Joseph Klapp, of Philadelphia, 74 years old, and a former instructor at the Jefferson Medical College and Hospital, died at his summer home in Ocean City recently from a complication of diseases. Dr. Klapp was graduated from Jefferson Medical College in 1889.

Dr. Robert Grier Le Conte, a prominent surgeon of Philadelphia, shot and killed himself at his home on the night of August 6th. In a note left to his wife he ascribed his act to financial troubles. Dr. Le Conte was born in 1865, and was a graduate of the University of Pennsylvania School of Medicine, class of 1888.

Dr. George S. Robinson, resident physician at the House of Correction, Philadelphia, for thirty-seven years, died on August 22nd at the Masonic Home where he has been resident physician for eight months. He was born in 1855, and was graduated from Jefferson Medical College of Philadelphia in 1881.

Dr. William H. Glynn, of Pittsburgh, who was graduated from Western Pennsylvana Medical College, Pittsburgh, in 1902, died on July 31st, aged 46 years. Dr. Glynn was on the staffs of the St. Roselia Foundling Asylum and of St. Joseph's Hospital. He served in France during the World War.

Dr. Luther B. Kline, a practicing physician in Catawissa since 1867, and the oldest doctor in that part of the state, died from cancer in the Bloomsburg Hospital on August 4th. He was aged 82 years and was a graduate of the Jefferson Medical College of Philadelphia, class of 1867. He served as Secretary to the Columbia County Medical Society for a number of years.

Shot by a man upon whom he had performed an operation, Dr. Duncan L. Despard, a prominent surgeon of Philadelphia and uncle of Mrs. John W. Davis, wife of the Democratic nominee for President, died on the night of August 5th in the Polyclinic Hospital. His assailant, Alfonso Masi, killed himself with the same weapon he had used on the physician. Dr. Despard, who was 55 years old, was unmarried and is survived by an aged mother. He was a graduate of the University of Pennsylvania and of Jefferson Medical College, receiving his doctor's degree there in 1901. He was demonstrator of clinical surgery at Jefferson Medical College and associate in gynecology at the Polyclinic Hospital.

Dr. George A. Piersol, of Philadelphia, who was professor emeritus of anatomy, histology and embryology at the University of Pennsylvania, died at his home on August 2d. He had been ill for several months. Dr. Piersol was born in 1856. He was a graduate of the University of Pennsylvania School of Medicine, class of 1877, the University of Berlin and the University of Wurzburg, Germany. He contributed largely to scientific knowledge in his particular fields, having published a number of technical books and innumerable articles. The most important of his books are his "Human Anatomy," "Normal Histology," and several books on the functions of the brain and the spinal column.

ITEMS

Dr. C. E. Hays and Miss Mary C. Murphy, of Johnstown, were married in Chicago on July 18th.

Dr. and Mrs. Martin E. Baback, of Johnstown, recently took a trip through New Jersey, New York and Canada.

Dr. and Mrs. Joseph E. Sands, of Bryn Mawr, are being congratulated upon the birth of a daughter, Suzette Stuart Sands, on August 11th.

Dr. and Mrs. Henry B. Golden, of Philadelphia, announce the betrothal of their daughter, Beatrice Earnshaw, to Mr. Hymen Silverman, of Pittsburgh.

Dr. B. Milton Garfinkle, of Harrisburg, has been in Vienna, Austria, for some time, doing postgraduate work in eye, ear, nose and throat. He will return late in September.

Dr. Tom A. Williams, of Washington, D. C., has been invited to give a series of Mental Hygiene Clinics in Pennsylvania beginning September 15th. These have been arranged under the auspices of the Woman's Welfare Association in Washington, of which Dr. Williams is Director of the Clinic of Nervous Disorders and Mental Hygiene.

GENERAL NEWS ITEMS

The Inter-State Postgraduate Assembly, directed by the Tri-State District Medical Association, extends a hearty invitation to the physicians of America who are in good standing in their State or Provincial Societies, to attend the annual assembly, which is to be held at Milwaukee, Wisconsin, October 27th, 28th, 29th, 30th and 31st, five full days of postgraduate work. Many eminent members of the profession and citizens have accepted places on the program.

U. S. VETERANS' BUREAU

The creation of a Medical Corps within the U. S. Veterans' Bureau, through an act of Congress, was recommended to Director Frank T. Hines, to-day, by the Medical Council in session at the Veterans' Bureau. This step was taken because of a belief that a permanent qualified personnel is highly essential to the best operation of the Bureau. The formation of a Medical Corps would give security of position to the doctors and assurance of permanent personnel to the Bureau.

The doctors in attendance at the Council sessions declared it their belief that the officials of the Bureau could greatly improve the medical service through the establishment of postgraduate courses for the training of the personnel along the lines of their special duties. Such courses would be established in hospital management, rating, tuberculosis, neuropsychiatry, x-ray, rhinology, and diagnosis.

The committee recommended that the Government Hospitals at New Haven and Denver be reëstablished as schools for training of doctors in tuberculosis.

The immediate establishment of diagnostic beds where the troublesome cases coming before the Bureau might be properly observed by the qualified and trained diagnosticians, was recommended. Such an arrangement would prove most valuable in cases where there was a difference of medical opinion as to the claimant's disability or doubt as to the exact diagnosis.

"We recommend the establishing of regional diagnostic groups, consisting of the best available Bureau and local medical personnel and utilizing so far as possible, as consultants, members of this Council," said the members.

The Council adopted a resolution recommending the creation of a unit under the direction of the Medical Director which would provide in permanent form a record of the new and valuable medical experiences resulting from the operation of such a large welfare organization as that of the Veterans' Bureau.

The establishment of a follow-up service was urged. This would provide for visits by Bureau nurses and doctors to the homes of those claimants who had been discharged as needing no further hospitalization.

The names of Dr. Horatio Pollock, Albany, N. Y., expert in neuropsychiatry, and Dr. Lawrason Brown, Saranac Lake, N. Y., a tuberculosis specialist, were added to the membership of the Council.

The Medical Council was given a free reign at their first session by General Hines and told to criticize the medical service most frankly. At the end of its sessions, it declared Gen. Frank T. Hines an able, courageous and fair executive, who has the welfare of the Bureau at heart and intends that the medical service shall be placed upon an efficient basis.

Dr. Kennon Dunham acted as chairman of the Council and Dr. M. T. MacEachorn as secretary. Dr. Ray L. Wilbur, of Stanford University, is the permanent chairman.

OFFICIAL TRANSACTIONS

THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Organized 1848 **Incorporated, December 20, 1890**

CALL TO 1924 SESSION

The object of this notice is to inform the members of the 1924 House of Delegates that in addition to the usual business incidental to the annual session, an amendment to the By-laws will be brought up for consideration and action.

COMMITTEES OF THE HOUSE OF DELEGATES

COMMITTEE ON CREDENTIALS

M. Edith MacBride, Chairman, Sharon.
Jefferson H. Wilson, Beaver.
Frank P. Lytle, Birdsboro.

REFERENCE COMMITTEE ON REPORTS OF OFFICERS AND STANDING COMMITTEES

Francis J. Dever, Chairman, Bethlehem.
George W. McNeil, Pittsburgh.
J. B. McMurray, Washington.

REFERENCE COMMITTEE ON SCIENTIFIC BUSINESS

John A. Campbell, Chairman, Williamsport.
C. Irwin Stiteler, Chester.
Seth A. Brumm, Philadelphia.

REFERENCE COMMITTEE ON NEW BUSINESS

Edward A. Shumway, Chairman, Philadelphia.
Clarence R. Phillips, Harrisburg.
Samuel P. Mengel, Wilkes-Barre.

COMMITTEE ON PLACE OF MEETING

Edgar M. Green, Chairman, Easton.
J. Newton Hunsberger, Norristown.
Elmer G. Weibel, Erie.

MEMBERS OF THE HOUSE OF DELEGATES*

ADAMS COUNTY

Wilson F. Hollinger, Abbottstown, Pres.
  J. Percival Dalbey, Gettysburg, Secy.,
J. Lawrence Sheetz, New Oxford.
  Edgar A. Miller, Gettysburg.
  Albert Woomer, Cashtown.

ALLEGHENY COUNTY (PITTSBURGH)

Harold A. Miller, Jenkins Bldg., Pres.
  William H. Mayer, Jenkins Arcade, Secy.
I. H. Alexander, Jenkins Bldg.
  Henry P. Ashe, 1304 Colwell St.
  Albert J. Bruecken, St. Francis Hospital.
Charles J. Bowen, 4526 Penn Ave.
  Alvin E. Bulger, 618 Braddock Ave., Braddock.
  Frank R. Braden, 1616 State St., Coraopolis.
James L. Foster, Blawnox.
  Amos W. Colcord, Clairton.
  Henry C. Flood, 805 Highland Bldg.
G. Clyde Kneedler, 501 Jenkins Bldg.
  Arthur H. Gross, 344 Lincoln Ave., Bellevue.
  Lyndon H. Landon, Jenkins Arcade.
Charles B. Maits, 6692 Kinsman Rd.
  Henry C. Westervelt, 5306 Westminster Place.
  William N. Woodward, 607 Fifth Ave., McKeesport.
Edward E. Mayer, Jenkins Arcade.
  Hunter H. Turner, 501 Jenkins Arcade.
  Lloyd L. Thompson, 305 E. Eighth St., Homestead.
Carey J. Vaux, City-County Bldg.
  Morris A. Slocum, Highland Bldg.
  Frank H. Rimer, Municipal Hospital.
Joseph M. Douthett, East End Trust Bldg.
  Evan W. Meredith, Jenkins Arcade.
  David B. Ludwig, Highland Bldg.
Edward B. Heckel, Jenkins Bldg.
  C. Bradford McAboy, Highland Bldg.
  J. Slater Crawford, 17 Center Ave., Ingram.
James I. Johnston, 4715 Fifth Ave.
  T. Wray Grayson, 8037 Jenkins Arcade.
  Frederick M. Jacob, Jenkins Arcade.
William H. Mayer, Jenkins Arcade.
  Henry T. Price, 1011 Westinghouse Bldg.
  Peter I. Zeedick, 1430 Columbus Ave.
George W. McNeil, Liberty Bldg.
  Edward A. Weiss, Jenkins Bldg.
  Lorraine L. Schwartz, 637 Union Arcade.
John W. Worrell, 110 S. Fairmount Ave.
  Herbert Leroy Jones, Jenkins Arcade.
  Alexander H. Colwell, Highland Bldg.

ARMSTRONG COUNTY

Andrew Sedwick, Kittanning, Pres.
  Jay B. F. Wyant, Kittanning, Secy.
Harry W. Allison, Kittanning.
  Frederick C. Monks, Kittanning.

BEAVER COUNTY

Bert C. Painter, New Brighton, Pres.
  Boyd B. Snodgrass, Rochester, Secy.
Jefferson H. Wilson, Beaver.
  Robert M. Patterson, Beaver Falls.

BEDFORD COUNTY.

Walter F. Enfield, Bedford, Pres.
  Norman A. Timmins, Bedford, Secy.

BERKS COUNTY (READING)

Heister H. Muhlenberg, 34 S. Fifth St., Pres.
  John E. Livingood, 249 N. Fifth St., Secy.
George W. Kehl, 313 N. Fifth St.
  Ira G. Shoemaker, 19 S. Ninth St.
  Winfield H. Ammarell, Birdsboro.
Frank P. Lytle, Birdsboro.
  Leroy W. Frederick, 418 N. Tenth St.
  Abner H. Bauscher, 336 N. Fifth St.

BLAIR COUNTY (ALTOONA)

Louis S. Walton, Central Trust Bldg., Pres.
  Charles F. McBurney, 604 Ninth St., Secy.
W. Albert Nason, Roaring Springs.
  Augustus S. Kech, 1410 Twelfth Ave.
  George E. Alleman, 2314 Broad Ave.

BRADFORD COUNTY

George W. Hawk, Sayre, Pres.
  Stanley D. Conklin, Sayre, Secy.
Perley N. Barker, Troy.
  Howard C. Down, Towanda.
  John M. Higgins, Sayre.

BUCKS COUNTY

J. Fred Wagner, Bristol, Pres.
  Anthony F. Myers, Blooming Glen, Secy.

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* The offset names are the alternates, and where street address only is given, the name of the city follows the name of the county.

William C. LeCompte, Bristol.
Frank B. Swartzlander, Doylestown.
James Collins, Bristol.

BUTLER COUNTY (BUTLER)

Olin A. Williams, 128 S. Main St., Pres.
L. Leo Doane, 357 N. Main St., Secy.
W. Rush Hockenberry, Slippery Rock.
Leslie R. Hazlett, Box 643.
Willis A. McCall, 215 S. Main St.

CAMBRIA COUNTY (JOHNSTOWN)

Thomas E. Mendenhall, The Rocks, Pres.,
Joseph J. Meyer, 425 Lincoln St., Secy.
William E. Grove, 406 Main St.
Harry J. Cartin, 331 Lincoln St.
William O. Lubken, Vine and Franklin Sts.
Edward Pardoe, South Fork.
Harry M. Stewart, 406 Main St.
Daniel Rice, Ebensburg.

CARBON COUNTY

Howard L. Hoffmeier, Mauch Chunk, Pres.
Jacob A. Trexler, Lehighton, Secy.
Joseph J. Bellas, Lansford.
Clinton J. Kistler, Lehighton.
Edward G. Bray, East Mauch Chunk.

CENTER COUNTY

Harold H. Longwell, Center Hall, Pres.
Oscar W. McEntire, Howard, Secy.
Harvey S. Braucht, Spring Mills.
Peter H. Dale, State College.
J. Coburn Rogers, Bellefonte.

CHESTER COUNTY

James T. Taylor, Pomeroy, Pres.
Joseph Scattergood, West Chester, Secy.
William T. Sharpless, West Chester.
Henry Pleasants, Jr., West Chester.
John A. Farrell, West Chester.

CLARION COUNTY

Hilton A. Wick, New Bethlehem, Pres.
Charles C. Ross, Clarion, Secy.
Charles A. Fitzgerald, Clarion.
George B. Woods, Curllsville.
John B. Miller, Sligo.

CLEARFIELD COUNTY

Evan L. Jones, Philipsburg, Pres.
John M. Quigley, Clearfield, Secy.
George B. Kirk, Kylertown.
J. Hayes Woolridge, Clearfield.
Warren W. Andrews, Philipsburg.

CLINTON COUNTY

George D. Green, Lock Haven, Pres.
Robert B. Watson, Lock Haven, Secy.
William J. Shoemaker, Lock Haven.
John B. Critchfield, Lock Haven.
David W. Thomas, Lock Haven.

COLUMBIA COUNTY

Clifton Z. Robbins, Bloomsburg, Pres.
Charles B. Yost, Bloomsburg, Secy.
Heister V. Hower, Berwick.
James R. Gemmill, Millville.
George F. Drum, Mifflinville.

CRAWFORD COUNTY

J. Russell Mosier, Meadville, Pres.
Cornelius C. Laffer, Meadville, Secy.
Oliver H. Jackson, Meadville.
V. Burton Eiler, Titusville.
Maurice T. Leary, Meadville.

CUMBERLAND COUNTY

William E. Peters, Carlisle, Pres.
Calvin R. Rickenbaugh, Carlisle, Secy.

DAUPHIN COUNTY (HARRISBURG)

George L. Laverty, 226 State St., Pres.
W. Stewart Russell, 1851 Berryhill St., Secy.
Edwin A. Nicodemus, 1439 Derry St.
David S. Funk, 300 N. Second St.
John R. Plank, 106 N. Front St., Steelton.
Clarence R. Phillips, 1646 N. Third St.
John W. Ellenberger, 922 N. Third St.
Herbert F. Gross, 1501 N. Second St.

DELAWARE COUNTY (CHESTER)

Stoddard P. Gray, 1925 W. Third St., Pres.
Walter E. Egbert, 601 E. Thirteenth St., Secy.
C. Irwin Stiteler, Fifth and Welsh Sts.
Walter E. Egbert, 601 E. Thirteenth St.
Frank R. Nothnagle, 408 E. Thirteenth St.

ELK COUNTY

Walter M. Black, St. Marys, Pres.
Samuel T. McCabe, Johnsonburg, Secy.
Samuel T. McCabe, Johnsonburg.
Samuel G. Logan, Ridgway.
Michael M. Rankin, Ridgway.

ERIE COUNTY (ERIE)

William B. Washabaugh, 253 W. Eighth St., Pres.
Roy S. Minerd, 24 W. Ninth St., Secy.
Elmer G. Weibel, 215 W. Seventh St.
James D. Stark, 960 E. Sixth St.
Lemuel A. Lasher, 325 W. Twenty-sixth St.
George A. Reed, 122 W. Twenty-first St.
Frank B. Krimmel, 361 E. Sixth St.
J. Elmer O'Brien, 302 E. Tenth St.

FAYETTE COUNTY

Jesse H. Hazlett, Vanderbilt, Pres.
Jacob S. Hackney, Uniontown, Secy.
Harry J. Bell, Dawson.
Owen R. Altman, Uniontown.
Thomas B. Echard, Connellsville.
Arthur E. Crow, Uniontown.
Robert H. Jeffrey, Uniontown.
Wilbur M. Lilley, Brownsville.

FRANKLIN COUNTY.

Ambrose W. Thrush, Chambersburg, Pres.
Samuel D. Shull, Chambersburg, Secy.
Frank N. Emmert, Chambersburg.
J. Burns Amberson, Waynesboro.
William C. Schultz, Waynesboro.

GREENE COUNTY

Rufus E. Brock, Waynesburg, Pres.
Harry C. Scott, Waynesburg, Secy.
Lindsay S. McNeely, Kirby.
Robert W. Norris, Waynesburg.
James A. Knox, Waynesburg.

HUNTINGDON COUNTY.

John M. Keichline, Huntingdon, Pres.
John M. Beck, Alexandria, Secy.
Cloyd G. Brumbaugh, Huntingdon.
George G. Harman, Huntingdon.
William J. Campbell, Mt. Union.

INDIANA COUNTY

William F. Weitzel, Indiana, Pres.
James M. Torrence, Indiana, Secy.
Frank F. Moore, Homer City.
Benjamin F. Coe, Indiana.
George E. Simpson, Indiana.

JEFFERSON COUNTY.

James C. Borland, Falls Creek, Pres.
William A. Hill, Reynoldsville, Secy.
Irvin R. Mohney, Brookville.
John H. Murray, Punxsutawney.

JUNIATA COUNTY

Benjamin H. Ritter, McCoysville, Pres.
Brady F. Long, Mifflin, Secy.
Benjamin H. Ritter, McCoysville.
Joseph S. Brown, Okeson.
John W. Deckard, Richfield.

LACKAWANNA COUNTY (SCRANTON)

Martin T. O'Malley, 306 N. Washington Ave., Pres.
George A. Clark, Connell Bldg., Secy.
Charles B. Noecker, 216 Connell Bldg.
Michael J. Noone, 2060 N. Main Ave.
John P. Donahoe, 233 Connell Bldg.
Frederick J. Bishop, 220 Connell Bldg.
Frederick P. Hollister, 508 Dime Bank Bldg.
Leo P. Gibbons, Connell Bldg.
John J. Brennan, 230 South Main Ave.
Albert J. Winebrake, 440 Madison Ave.
William J. O'Malley, 1406 N. Main Ave.

LANCASTER COUNTY (LANCASTER)

Maurice M. Denlinger, Rohrerstown, Pres.
Charles P. Stahr, 139 E. Walnut St., Secy.
J. Paul Roebuck, 233 N. Duke St.
Jacob E. Hostetter, Gap, R. D. 1.
George E. Day, Strasburg.
Frank G. Hartman, 136 N. Duke St.
Charles H. Witmer, 126 E. Chestnut St.
Horace C. Kinzer, 128 N. Duke St.

LAWRENCE COUNTY

William D. Cleland, New Castle, Pres.
William A. Womer, New Castle, Secy.
Ernest U. Snyder, New Castle.
Frank F. Urey, New Castle.
Henry C. Mitchell, New Castle.

LEBANON COUNTY

David S. Bordner, Palmyra, Pres.
W. Horace Means, Lebanon, Secy.
J. DeWitt Kerr, Lebanon.
Seth A. Light, Lebanon.
Franklin B. Witmer, Lebanon.

LEHIGH COUNTY (ALLENTOWN)

Thomas H. Weaber, 211 N. Eighth St., Pres.
J. Treichler Butz, 2510 Chew St., Secy.
Frederick R. Bausch, 109 N. Second St.
J. Treichler Butz, 2510 Chew St.
Hope M. Ritter, 101 N. Eleventh St.
Frederick A. Fetherolf, 941 Hamilton St.
Thomas W. Cook, 631 St. John St.
Charles O. Henry, 102 N. Tenth St.

LUZERNE COUNTY (WILKES-BARRE)

John E. Scheifly, 284 Wyoming Ave., Pres.
Edward W. Bixby, 61 W. Ross St., Secy.
Samuel P. Mengel, 181 S. Franklin St.
Charles Long, 33 S. Washington St.
Ralph E. Buckley, 143 N. Church St., Hazleton.

LYCOMING COUNTY (WILLIAMSPORT)

Albert F. Hardt, 414 Pine St., Pres.
Walter S. Brenholtz, 151 E. Third St., Secy.
George C. Davis, Milton.
William E. Delaney, 854 W. Third St.
Joseph W. Albright, Muncy.
John A. Campbell, 838 Funston Ave.
Charles J. Cummings, 755 W. Fourth St.
J. Louis Mansuy, Ralston.

MCKEAN COUNTY

Earle McCormack McLean, Bradford, Pres.
Francis DeCaria, Bradford, Secy.
Evan O'Neill Kane, Kane.
David E. Vogan, Kane.
Howard M. Cleveland, Mt. Jewett.

MERCER COUNTY

George Yeager, Mercer, Pres.
M. Edith MacBride, Sharon, Secy.
M. Edith MacBride, Sharon.
Frank M. Bleakney, Grove City.
Clarance W. McElhaney, Greenville.

MIFFLIN COUNTY

Hugh S. Alexander, Belleville, Pres.
James A. C. Clarkson, Lewistown, Secy.
Charles J. Stambaugh, Reedsville.
Henry W. Sweigart, Lewistown.
Thomas H. Smith, Burnham.

MONROE COUNTY

William E. Andrew, Stroudsburg, Pres.
Walter L. Angle, E. Stroudsburg, Secy.
J. Anson Singer, Stroudsburg.
Walter L. Angle, E. Stroudsburg.

MONTGOMERY COUNTY

John B. Sherbon, Pottstown, Pres.
Edgar S. Buyers, Norristown, Secy.
J. Newton Hunsberger, Norristown.
Frederick B. Little, Norristown.
Winfred J. Wright, Skippack.
Herbert A. Bostock, Norristown.
J. Elmer Gotwals, Phoenixville.
Charles F. Doran, Phoenixville.

MONTOUR COUNTY

Carl E. Ervin, Danville, Pres.
John H. Sandel, Danville, Secy.
J. Allen Jackson, Danville.
Enoch H. Adams, Danville.
Robert S. Patten, Danville.

NORTHAMPTON COUNTY

Edward S. Rosenberry, Stone Church, Pres.
Arthur B. Hamilton, Bethlehem, Secy.
Francis J. Dever, Bethlehem.
Walter D. Chase, Bethlehem.
James J. Quiney, Easton.
Edgar M. Green, Easton.
John E. Fretz, Easton.
Frederick C. Roberts, Easton.

NORTHUMBERLAND COUNTY

Charles K. Deitz, Shamokin, Pres.
Charles H. Swenk, Sunbury, Secy.
William T. Graham, Sunbury.
George W. Reese, Shamokin.
Horatio W. Gass, Sunbury.

PERRY COUNTY

John A. Sheibly, Shermans Dale, Pres.
A. Russell Johnston, New Bloomfield, Secy.
Benjamin F. Beale, Duncannon.
George W. Gault, Marysville.

PHILADELPHIA COUNTY (PHILADELPHIA)

F. Hurst Maier, 2019 Walnut St., Pres.
Henry G. Munson, 2046 Chestnut St., Secy.

Term expiring 1924

Moses Behrend, 1738 Pine St.
Walter S. Cornell, 729 City Hall.
Mary Buchanan, 2106 Chestnut St,
William N. Bradley, 1725 Pine St,

I. Rendall Strawbridge, 1418 N. Fifteenth St.
James H. Arnett, 2540 N. Eleventh St.
Seth A. Brumm, 818 Stock Exchange Bldg.
Henry F. Page, 315 S. Sixteenth St.
Francis H. Adler, 313 S. Seventeenth St.
Henry Beates, Jr., 260 S. Sixteenth St.
Marian H. Rea, Gulph Rd., Bryn Mawr.
Collin Foulkrod, 3910 Chestnut St.
Charles A. E. Codman, 4116 Spruce St.
Louis Edeiken, 2412 S. Fifth St.
L. Waller Deichler, 2028 Chestnut St.
L. Webster Fox, 303 S. Seventeenth St.
William H. Good, 5309 Rising Sun Lane.
Stanley Q. West, 138 W. Walnut Lane, Gtn.
J. Norman Henry, 1906 Spruce St.
William C. Ely, 3912 Chestnut St.
McCluney Radcliffe, 1906 Chestnut St.
George A. Knowles, 4812 Baltimore St.
A. Graeme Mitchell, 1725 Pine St.
John H. Remig, 805 S. Twelfth St.
Edward J. G. Beardsley, 258 S. Sixteenth St.
Russell S. Boles, Overbrook and Fifty-third Sts.
Joseph C. Doane, Philadelphia General Hospital.
John W. West, 1125 Wallace St.
G. Mason Astley, 5317 Master St.
Ralph E. Getelman, 2011 Chestnut St.
George C. Yeager, 1419 E. Susquehanna Ave.
Irving W. Hollingshead, 123 S. Eighteenth St.
John A. Kolmer, Cynwyd.

Term expiring 1925

John Welsh Croskey, 3325 Powelton Ave.
Edwin S. Cooke, 1831 Chestnut St.
Damon B. Pfeiffer, 2028 Pine St.
Thomas R. Currie, 512 W. Lehigh Ave.
John F. Roderer, 2426 N. Sixth St.
William H. Good, 5309 Rising Sun Ave.
Edward A. Shumway, 2046 Chestnut St.
Elmer H. Funk, 6307 Sherwood Rd., Overbrook.
William N. Johnson, 6430 Germantown Ave.
Paul B. Cassidy, 2037 Pine St.
John A. O'Connell, 2128 Pine St.
William R. Watson, 2124 Pine St.
T. Turner Thomas, 2009 Spruce St.
Howard A. McKnight, 241 S. Thirteenth St.
Samuel A. Savitz, 1825 Tasker St.
John H. Musser, Jr., 262 S. Twenty-first St.
Abraham I. Rubenstone, 1208 Spruce St.
Mary M. Spears, Medical Arts Bldg.
Howard D. Geisler, 132 W. Walnut Lane, Gtn.
Arthur J. Zimlick, Greene and Rittenhouse Sts., Gtn.
Charles E. Price, 316 N. Fifty-second St.
Thomas Klein, 250 S. Eighteenth St.
Richard P. Wilkinson, 1613 S. Broad St.
D. Clinton Guthrie, 722 N. Fortieth St.
William B. Scull. 3024 Richmond St.
Maurice J. Karpeles, 146 W. Chelten Ave., Gtn.
Harry B. Wilmer, 138 W. Walnut Lane, Gtn.
Henry G. Munson, 2046 Chestnut St.
Eugene C. Murphy, 1841 S. Broad St.

POTTER COUNTY

Elwin H. Ashcraft, Coudersport, Pres.
Ross H. Jones, Coudersport, Secy.

SCHUYLKILL COUNTY

George O. O. Santee, Cressona, Pres.
Arthur B. Fleming, Tamaqua, Secy.
J. Spencer Callen, Shenandoah.
T. Lamar Williams, Mt. Carmel.
Thomas J. McGurl, Minersville.
*George R. S. Corson, Pottsville.
Merchant C. Householder, Pottsville.
John J. Dailey, McAdoo.

SNYDER COUNTY

Milton E. Wagner, McClure, Pres.
John O. Wagner, Beaver Springs, Secy.
Milton E. Wagner, McClure.
A. Jerome Herman, Middleburg.
Percival Herman, Selinsgrove.

SOMERSET COUNTY

Henry A. Zimmerman, Hollsopple, Pres.
H. Clay McKinley, Meyersdale, Secy.
Fred B. Shaffer, Somerset.
Clinton T. Saylor, Rockwood.
John H. Gardner, Stoyestown.

SULLIVAN COUNTY

Martin E. Herrmann, Dushore, Pres.
Philip G. Biddle, Dushore, Secy.
Martin E. Herrmann, Dushore.
Justin L. Christian, Lopez.
Philip G. Biddle, Dushore.

SUSQUEHANNA COUNTY

Dever J. Peck, Susquehanna, Pres.
Edward R. Gardner, Montrose, Secy.
William J. Condon, Susquehanna.
Robert B. Mackey, Montrose.
Horace D. Washburn, Susquehanna.

TIOGA COUNTY

Clarence C. Gentry, Knoxville, Pres.
Solomon P. Hakes, Tioga, Secy.
Fay X. Field, Wellsboro.
Farnham H. Shaw, Wellsboro.
John C. Secor, Westfield.

UNION COUNTY

Amos V. Persing, Allenwood, Pres.
Charles A. Gundy, Lewisburg, Secy.

VENANGO COUNTY

Winnie K. Mount, Oil City, Pres.
John F. Davis, Oil City, Secy.
J. Irwin Zerbe, Franklin.
Carm Y. Detar, Oil City.
John M. Camp, Oil City.

WARREN COUNTY (WARREN)

Elizabeth S. Beaty, 100 East St., Pres.
Edwin G. Hamilton, State Hospital for Insane, Secy

WASHINGTON COUNTY

James H. Corwin, Washington, Pres.
Charles C. Cracraft, Clayville, Secy.
William D. Martin, Dunn's Station.
Charles L. Harsha, Canonsburg.
John H. Cary, Washington.
John B. McMurray, Washington.
David H. Ruben, Washington.
Charles C. Cracraft, Claysville.

WAYNE COUNTY

Frank I. Smith, Shohola, Pres.
Hugh Stevenson, III, Waymart, Secy.
Edward O. Bang, South Canaan.
Arthur J. Simons, Newfoundland.
Hugh Stevenson, III, Waymart.

WESTMORELAND COUNTY

William M. Bortz, Greensburg, Pres.
Myers W. Horner, Mt. Pleasant, Secy.
Charles D. Ambrose, Ligonier.
Harry W. Tittle, New Florence.
Edgar B. Sloterbeck, Monessen.
William H. Taylor, Irwin.
James M. Patton, Vandergrift.
Thomas St. Clair, Latrobe.

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*Deceased.

WYOMING COUNTY

T. Oliver Williams, Tunkhannock, Pres.
Herbert L. McKnown, Tunkhannock, Secy.
William B. Beaumont, Laceyville.
Frank J. Austin, Laceyville.

YORK COUNTY (YORK)

John E. Meisenhelder, Hanover, Pres.
Pius A. Noll, 117 S. George St., Secy.
William F. Bacon, 50 S. George St.
Samuel K. Pfaltzgraff, 442 W. Market St.
Charles W. Eisenhower, 211 S. George St.
Curtis J. Hamme, Dover.
Charles Rea, 105 E. Market St.
Gibson Smith, 222 S. George St.

REPORTS OF OFFICERS AND COMMITTEES

REPORT OF THE SECRETARY

To the President and House of Delegates:

Per Capita Receipts, August 17, 1923, to August 17, 1924:

For 1922 Assessment 3 members	$15.00	
For 1923 Assessment 113 members (including 37 half-year members)	472.50	
For 1924 Assessment 7253 members (including 5 half-year members)	36,252.50	
		$36,740.00
Medical Defense Allotment	$1,885.75	
Medical Benevolence Allotment	1,827.25	
Endowment Fund	1,200.00	
		$4,913.00

Net from dues available for current yearly expenditures	$31,827.00
Gross receipts from Journal	9,655.40
Medical Society of Delaware, Journal subscriptions for 137 members for 1923	274.00
Subscriptions for 136 members for 1924	272.00
Gross receipts from 1923 commercial exhibit	5,050.94
Receipts from 1924 commercial exhibit to July 31, 1924	2,189.35
Gross rental from Harrisburg property	2,535.00
Loan from Medical Defense Fund	2,000.00
	$53,803.69
Rebated to Philadelphia County Medical Society on account of Medical Defense	485.25
Total available for current yearly administrative expenditures	$53,318.44
Total current yearly administrative expenditures	$42,979.17

PRINCIPAL ITEMS OF ADMINISTRATIVE EXPENSE

Atlantic Medical Journal (printing and mailing)	$16,925.17
Executive Secretary's Office	10,539.81
Annual Session	5,045.37
Secretary's Office	3,675.00
Travel Expense	489.96
Printing and Stationery	398.81

MEMBERSHIP

The total paid membership August 17, 1923, was 7,232; the total paid membership August 17, 1924, was 7,253, with the following component society distribution for 1923 and 1924, respectively: Adams County, 24, 25; Allegheny County, 1195, 1243; Armstrong, 55, 55; Beaver, 64, 68; Bedford, 16, 16; Berks, 137, 133; Blair, 87, 90; Bradford 47, 44; Bucks, 75, 75; Butler, 52, 54; Cambria, 136, 140; Carbon, 28, 27; Center, 26, 26; Chester, 73, 71; Clarion, 31, 28; Clearfield, 66, 67; Clinton, 24, 24; Columbia, 40, 37; Crawford, 50, 48; Cumberland, 36, 32; Dauphin, 156, 152; Delaware, 87, 92; Elk, 24, 23; Erie, 135, 133; Fayette, 118, 124; Franklin, 53, 52; Greene, 28, 26; Huntingdon, 35, 39; Indiana, 63, 60; Jefferson, 53, 53; Juniata, 12, 13; Lackawanna, 232, 233; Lancaster, 128, 124; Lawrence, 56, 56; Lebanon, 38, 35; Lehigh, 110, 102; Luzerne, 234, 247; Lycoming, 112, 109; McKean, 40, 38; Mercer, 71, 71; Mifflin, 26, 25; Monroe, 14, 12; Montgomery, 154, 148; Montour, 24, 22; Northampton, 137, 140; Northumberland, 60, 56; Perry, 14, 14; Philadelphia, 1924, 1942; Potter, 15, 14; Schuylkill, 137, 131; Snyder, 10, 8; Somerset, 46, 45; Sullivan, 6, 7; Susquehanna, 18, 17; Tioga, 30, 30; Union, 16, 15; Venango, 56, 55; Warren, 49, 48; Washington, 121, 122; Wayne, 25, 28; Westmoreland, 151, 143; Wyoming, 12, 12; York, 117, 115.

During the year we lost ninety-five of our members by death, twenty-three by removal, twenty-nine by resignation, and two by expulsion.

Eleven societies show no change in membership; eighteen societies, a gain; thirty-four, a loss.

MEDICAL DEFENSE

Applications for defense against suits for alleged malpractice since September 1, 1923, total six, numbering from case No. 167 to 172, inclusive.

Case No. 167. Application dated March 27, 1924. Burn from hot water bottle used in postoperative care. Summons served March 25, 1924. Appearance made in court.

Case No. 168. Application dated June 17, 1924. Alleged faulty treatment of acute gonorrheal urethritis.

Case No. 169. Application dated June 28, 1924. Alleged false interpretation of laboratory findings. Summons not served.

Case No. 170. Application dated July 9, 1924. Cellulitis and abscess following intravenous medication. Summons not served.

Case No. 171. Application dated July 3, 1924. Alleged failure to remove sutures from operative site. Summons served June 26, 1924.

Case No. 172. Application dated August 5, 1924. Alleged incompetent treatment of fracture into elbow joint. Summons served July 24, 1924.

The following cases have been closed during the past year:

Case No. 130. Judgment of nonsuit.

Case No. 144. Judgment of non-pros.

Case No. 153. Judgment against defendant in the sum of $491.75. Defendant refused to permit filing of motion for new trial, stating that rather than ask his colleagues again to spend several days in court waiting to be called as witnesses he would pay the judgment. Permission granted by Committee of Council.

Case No. 162. Settled and discontinued with permission of Committee of Council.

Case No. 163. Settled and discontinued with permission of Committee of Council.

Cases No. 162 and No. 163 were suits for so-called x-ray burns. While the applications of both members were originally approved, in each instance a review by expert roentgenologists of the apparatus used by the defendant and the exposure to which the plaintiff had been subjected by the defendant during examination or treatment resulted in the finding that the position of the defendant was indefensible.

As a result of experience in these two cases greater care will be exercised in the future by the Committee of Council in approving and accepting applications for defense in cases involving alleged malpractice in the practice of radiology. The Board of Censors of county medical societies should undoubtedly act as a *quasi* grand jury in determining whether or not the applicant for medical defense has a legitimate and defensible case.

We note with interest that the Philadelphia County Medical Society has ceased to give more than moral support to those members sued for alleged malpractice who carry liability insurance.

We have during the past year actually expended $1,025.00 in the defense of our members, in contrast with $912.00 in 1923; $310.00 in 1922; $150.00 in 1921; and $4,209.00 in 1920.

BENEVOLENCE FUND

Increasing demands upon the earnings of our Benevolence Fund suggest the advisability of a careful consideration of plans for increasing the amount of the fund and the scope of its benefactions. While it is not desirable that the benefits from this fund should be at any time looked upon as resembling the benefits operative under health, accident or old age insurance, the amount of money available for distribution should be sufficiently large to render real service to beneficiaries whose financial income is otherwise inadequate to provide the ordinary necessities of life. The accumulation of an adequate fund by the puny allotment possible from our annual assessment has been and will continue to be slow. The fund should be enlarged by contributions and bequests from those of our members financially able to contribute.

OFFICIAL VISITS

The printed reports of our delegates to the New Jersey Medical Society, the West Virginia Medical Society, the Pennsylvania Dental Society and the Pennsylvania Pharmaceutical Association strongly indicate the advisability of continued effort in the cultivation of closer relations with neighboring organizations of similar type.

The value of official visits by officers of the State Society to meetings of the component societies has been emphasized this year. Your Secretary is in a position to note the favorable reaction manifested in various ways by the various societies after an interesting visit from the President, President-elect, or Trustees and Councilors. Since provision is made to pay the travel expense of these officers, we trust that invitations from the component societies will be extended frequently and promptly accepted.

SIXTH COUNCILOR DISTRICT

In the death of Dr. Irwin J. Moyer, of Pittsburgh, Councilor for the Sixth District since 1915, our Society has lost one of its most faithful workers.

There are seven societies in the Sixth Councilor District, the membership of which comprises more than twenty-five per cent of our Society's total membership, and the demand made upon Dr. Moyer's time and energy has of necessity been great. Since the creation of this district in 1920, Dr. Moyer has visited annually Allegheny, Greene, Fayette, Washington and Westmoreland County Medical Societies. Twice he has visited the Somerset County Medical Society and once the Bedford County Medical Society.

Two days before his death, Dr. Moyer conferred with the Board of Directors of the Allegheny County Medical Society regarding his plans for a meeting of the two censorial districts comprising the Sixth Councilor District, to be held in Pittsburgh in September or October. Dr. Moyer's plans for such a meeting will be completed by the officers of the Allegheny County Medical Society coöperating with this office, and the meeting will be held some time in October.

In closing we wish to express our appreciation of the coöperation received from the officers of this Society and its component societies.

Respectfully submitted,
Walter F. Donaldson, *Secretary.*

REPORT OF THE EXECUTIVE SECRETARY

To the Board of Trustees:

The year which has elapsed since the last session of the Legislature has not been an idle year, in so far as legislative matters are concerned. Years ago it was the custom to wait until the Legislature had been in session some time and measures had been introduced that were not in harmony with the best interests of the medical profession, before action was taken by organized medicine to combat these measures. There has been a great change in this procedure, due to the increased interest manifested by the officers and a larger number of members of the county societies than previously.

During the past year the Medical Legislature Conference, by direction of the House of Delegates, sponsored a one-board bill. A tentative draft of this bill was prepared by James Walker, Esq., of Philadelphia, a former member of the Legislature and an attorney of experience. About the time that this report will appear in the Atlantic Medical Journal copies of this bill will be in the hands of the secretaries of the component county medical societies, and it is the desire of the officers and members of the Medical Legislative Conference, nay it is their expressed request, that this bill shall be given careful, serious and constructive reading and criticism, and that any errors, corrections or suggestions which shall appeal to the members of the medical profession shall be transmitted to Dr. George A. Knowles, President of the Conference.

For many years the practitioners of the state were to a great degree made safe in the practice of their profession through the watchfulness of the Bureau of Medical Education and Licensure, which under the Code passed in 1923, is now the Board of Medical Education and Licensure. Since the organization of that body there have been many changes in the healing art which have come with the change of business and the trend of the times. We would not say that this Board has become obsolete in its usefulness but rather that it has become necessary to add several provisions and functions, which cannot be done under the Act of 1911. It, therefore, is imperative that the entire medical profession of Pennsylvania endorse and back up the work of the Committee on Public Health Legislation of our State Society through the Medical Legislative Conference.

It is the wish of your Executive Secretary that we may have the entire coöperation of the officers and members of the Medical Society of the State of Pennsylvania, and that every possible step may be taken to become familiar with the attitude of the Senators and Representatives who are to serve during the session of 1925, so that our work may be increasingly successful through the information which we hope to receive from every county in the state.

Inasmuch as there has been a commission working upon the present law known as the Workmen's Compensation Act and whatever report this commission has to make will deal with such suggestions and recommendations as are pertinent to the case, this office will not offer any suggestions.

From newspaper reports we are assured that an organization will introduce a bill into the 1925 session of the Legislature to repeal the provisions of the compulsory vaccination law, now enforced by the State Department of Health. Word has also come that the Antivivisection Society will present a measure which has for its purpose the elimination of experimentation upon animals for scientific purposes. These two measures should also receive the careful attention of the medical profession of the state.

We trust that the officers and members of the component county societies will feel free to call upon the office of the Executive Secretary for any assistance which they desire in relation to the work for which this office was created.

REPORT ON THE JOURNAL

More than a year has elapsed since the consolidation of the two state journals which are now published under the name of the Atlantic Medical Journal, and it is possible for us to analyze some of the advantages which have accrued from such an association.

Notwithstanding the industrial depression which has been apparent to business men and which of necessity has affected the medical profession, the membership list of the county societies, as reflected in the subscription list of the Journal, remains approximately the same as last year. This is not to be construed that the Journal alone has been instrumental in retaining the membership of the county societies. It has, however, become apparent that the Journal appeals to many in the state as a good medium for publication of articles, inasmuch as the Editor has been compelled to decline a great many splendid papers for lack of space.

The time is not far distant when either a larger appropriation for the Journal will be necessary, or some other means must be created by which revenue may be obtained in order that increased space may be made available in each issue. It was necessary last year to eliminate the membership list from the pages of the Journal, and unless we can obtain funds to pay for additional pages it may possibly be necessary to omit from the publication much that is of benefit as well as interest to the profession of the state.

The Medical Society of Delaware, through its officers, has been prompt in submitting to the Journal copy for its department, and we feel that the Delaware medical profession should be satisfied with the work which has been jointly issued during the past year. It is pleasing also to note that the subscription list of Delaware has maintained its standing numerically, and we hope that the year to come will see whatever increase in membership it is possible to obtain. We have not abandoned the thought that at some time in the future the Atlantic Medical Journal may cover a larger territory and wield a greater influence than it does at present.

Following is a statement showing income from the Journal from August 15, 1923, to August 19, 1924:

Advertising	$9,212.14
Subscriptions	174.70
Delaware subscriptions for 1923	274.00
Delaware subscriptions for 1924	272.00
Authors' payments for cuts	129.67
Periodic Health Examination Records	88.16
Sale of single Journals	27.63
Miscellaneous income	23.10
Total	$10,201.40

REPORT ON THE ANNUAL SESSION

Reading, Berks County, for the first time in years, is to be the host of the State Society at its 74th annual session, which will occur October 6-9, 1924. That county society has been actively interested and coöperating with the Manager in preparation for the session. The Rajah Temple has been engaged for the week, and all the meetings, as well as the President's Reception and Commercial and Scientific Exhibits will be held under its spacious roof.

The first floor and its mezzanine will be occupied by 75 commodious booths, where we will find many old friends and some new ones. This exhibit continues to be one of the best presented to the medical profession in the country, and the commercial exhibit of our Society has a reputation hard to beat. We trust the members will prove this assertion by visiting every booth and investigating personally the merits of each exhibitor.

The second floor will be occupied by the Section on Medicine; and the third floor will house the General Meetings, the Section on Surgery, and the President's Reception on Wednesday night. The Section on Pediatrics will meet on the third floor mezzanine; while the Section on Diseases of the Eye, Ear, Nose and Throat will occupy the fourth floor. All of these floors may be reached comfortably by large stairways and also by two comfortable elevators of large capacity.

The beauty of Rajah Temple and its conveniences to the center of the city of Reading should be an inducement to every doctor in the state who can possibly do so to attend the Reading session.

The Scientific Exhibit is being arranged for by the members of the Berks County and Philadelphia County Societies, and ample room will be provided in Rajah Temple for this exhibit, the exact details of which we are not able to give at the present time.

The social arrangements made by the Berks County Society and those for the President's Reception under the management of the State Society give promise of a very enjoyable week. The scientific program, which was published in the August issue, is one of the best ever presented before the Society. We are predicting a record registration of not less than 1,000, and the management hopes not to be disappointed.

Respectfully submitted,

Frederick L. Van Sickle, *Executive Secretary.*

REPORT OF THE TREASURER

GENERAL FUND

RECEIPTS

1923	
Sept. 1, to cash, balance on hand	$ 4,521.88
Sept. 27, to cash received from Dr. F. L. Van Sickle	642.64
Sept. 28, to cash received from Dr. W. F. Donaldson	86.10
Oct. 13, to cash received from Dr. W. F. Donaldson	125.05
Oct. 17, to cash received from Medical Society of Delaware, 1923	274.00
Oct. 25, to cash received from Dr. F. L. Van Sickle	792.45
Nov. 1, to cash received from Dr F. L. Van Sickle	1,009.22
Nov. 1, to cash received from Dr. W. F. Donaldson	28.70
Nov. 26, to cash received from Dr W. F. Donaldson	37.65
Dec. 5, to cash received from Dr. F. L. Van Sickle	2,027.48
Dec. 5, to cash received from Dr. F. L. Van Sickle	825.77
Dec. 5, to cash received from Dr. W. F. Donaldson	77.90
Dec. 7, to cash received from Dr. F. L. Van Sickle	3,143.32
Dec. 28, to cash received from Dr. W. F. Donaldson	280.70
Dec. 29, to cash received from Loan—Medical Defense Fund	2,000.00
1924	
Jan. 5, to cash received from Dr. F. L. Van Sickle	1,294.89
Jan. 5, to cash received from Dr. W. F. Donaldson	324.00
Jan 17, to cash received from Dr. W. F. Donaldson	3,212.25
Feb. 2, to cash received from Dr. W. F. Donaldson	3,415.10
Feb. 2, to cash received from Dr. F. L. Van Sickle	1,041.76
Feb 18, to cash received from Dr. W. F. Donaldson	7,618.10
Mar. 4, to cash received from Dr. F. L. Van Sickle	959.34
Mar. 4, to cash received from Dr. W. F. Donaldson	3,181.50
Mar. 19, to cash received from Dr. W. F. Donaldson	2,708.60
Apr. 3, to cash received from Dr. W. F. Donaldson	7,469.60

Apr. 3, to cash received from Dr. F. L. Van Sickle	1,030.56
Apr. 19, to cash received from Dr. W. F. Donaldson	2,956.50
May 1, to cash received from Dr. W. F. Donaldson	607.50
May 2, to cash received from Dr. F. L. Van Sickle	2,272.30
May 20, to cash received from Dr. W. F. Donaldson	117.00
June 9, to cash received from Dr. W. F. Donaldson	184.50
June 9, to cash received from Dr. F. L. Van Sickle	1,340.53
June 19, to cash received from Dr. W. F. Donaldson	324.00
July 3, to cash received from Dr. W. F. Donaldson	85.50
July 3, to cash received from Dr. F. L. Van Sickle	1,331.03
Aug. 6, to cash received from Dr. F. L. Van Sickle	1,124.96
Aug. 6, to cash received from Dr. W. F. Donaldson	182.25
Aug. 21, to cash received from Dr. W. F. Donaldson	4.50
Aug. 21, to cash received from Medical Society of Delaware, 1924	272.00
Aug. 22, to cash received from Dr. F. L. Van Sickle	729.37
July 7, to cash received from U. S. Nat'l Bank—Int. for June	38.84
July 31, to cash received from U. S. Nat'l Bank—Int. for July	37.04
Aug. 31, to cash received from Medical Defense Fund in payment of Vouchers drawn against said Fund	1,510.25
Aug. 31, to cash received from Medical Benevolence Fund in payment of Vouchers drawn against said Fund	654.45
Total receipts—General Fund	$61,901.08

DISBURSEMENTS

1923

Order No.		
1.	Oct. 13, by cash, Dr. F. L. Van Sickle, Salary as Executive Secretary	$ 416.67
2.	Oct. 13, by cash, Mary S. Blair, Salary as Business Manager	166.67
3.	Oct. 13, by cash, Hyacinth Beard, Salary as Stenographer	110.00
4.	Oct. 13, by cash, F. L. Van Sickle, Rent, Permanent Quarters	75.00
5.	Oct. 13, by cash, Jenkins Arcade Co., Rent, Pittsburgh Office	30.00
6.	Oct. 13, by cash, J. B. Lowman, Building & Loan Investment	100.00
7.	Oct. 13, by cash, Mary Hunter, Salary as Stenographer	80.00
8.	Oct. 13, by cash, American Surety Co., Premium, Treasurer's Bond	37.50
9.	Oct. 13, by cash, American Surety Co., Premium, Secretary's Bond	12.50
10.	Oct. 13, by cash, F. E. Filson. Plumbing, Permanent Quarters	100.00
11.	Oct. 13, by cash, Mrs. C. L. Stevens, Old Journals for filing	25.00
12.	Oct. 13, by cash, Evangelical Press, Balance due September Journal	242.44
13.	Oct. 13, by cash, Evangelical Press, 10,000 Letters, Com. on Public Relations	26.00
14.	Oct. 13, by cash, W. S. Brenholtz, Expense, Trustee & Coun'r	49.37
15.	Oct. 13, by cash, Evangelical Press, Postage	3.33
16.	Oct. 13, by cash, A. G. Trimble, Buttons and Badges, Annual Meeting	89.00
17.	Oct. 13, by cash, Evangelical Press, Envelopes, Executive Secretary	13.15
18.	Oct. 13, by cash, J. M. Quigley, Expense, Trustee and Coun'r	69.87
19.	Oct. 13, by cash, Lawrence Litchfield, Expense, President	33.34
20.	Oct. 13, by cash, W. F. Donaldson, Balance due on Secretaries' Conference	47.50
21.	Oct. 13, by cash, William Penn Hotel, Expense for Scientific Exhibit, 1923 Session	206.00
22.	Oct. 13, by cash, E. B. Heckel, Interest on Benevolence Fund	89.25
23.	Oct. 16, by cash, National Printing Co., Expense, Scientific Exhibit, 1923 Session	13.50
24.	Oct. 16, by cash, Samuel R. Haythorn, Expense, 1923 Session	22.57
25.	Oct. 16, by cash, William Penn Hotel, Expense, Dr. Alfred Hess, 1923 Session	7.00
26.	Oct. 16, by cash, C. B. Longenecker, Expense as Assistant Secretary, 1923 Session	62.52
27.	Oct. 16, by cash, John R. Caulk, Expense, 1923 Session	75.00
28.	Oct. 29, by cash, William Whitford, Reporting, 1923 Session	200.73
29.	Oct. 29, by cash, Evangelical Press, Expense, Com. on Archives	50.00
30.	Oct. 29, by cash, Ida L. Little, Expense, 1923 Session	5.30
31.	Oct. 29, by cash, E. B. Heckel, Interest on Benevolence Fund	106.25
32.	Oct. 29, by cash, Jenkins Arcade Co., Rent, Secretary's Office	30.00
33.	Nov. 15, by cash, Thomas S. Cullen, Expense, 1923 Session	35.00
34.	Nov. 15, by cash, Evangelical Press, October Journal	1,188.51
35.	Nov. 15, by cash, Evangelical Press, Printing Official Program, 1923 Session	216.38
36.	Nov. 15, by cash, Evangelical Press, Printing Official Transactions, 1923 Session	45.78
37.	Nov. 15, by cash, James P. O'Hare, Expense, 1923 Session	103.91
38.	Nov. 15, by cash, William H. Sears, Expense, Scientific Program Committee	18.00
39.	Nov. 15, by cash, F. L. Van Sickle, Expense F. E. Dillan, reporting 1923 Session	75.00
40.	Nov. 15, by cash, F. L. Van Sickle, Expense, 1923 Session	3,143.32
41.	Nov. 15, by cash, Mrs. M. C. Repp, Reporting, 1923 Session	135.00
42.	Nov. 26, by cash, F. L. Van Sickle, Salary as Executive Secretary	416.67
43.	Nov. 26, by cash, F. L. Van Sickle, Rent, headquarters office	75.00
44.	Nov. 26, by cash, Mary S. Blair, Salary, Business Manager	166.67
45.	Nov. 26, by cash, Hyacinth Beard, Salary as Stenographer	110.00
46.	Nov. 26, by cash, Mary Hunter, Salary as Stenographer	85.00
47.	Nov. 26, by cash, Jenkins Arcade Co., Rent, Secretary's Office	30.00
48.	Nov. 26, by cash, J. B. Lowman, Building & Loan Investment	100.00
49.	Nov. 26, by cash, T. F. Arnold, Reporting, 1923 Session	150.00
50.	Nov. 26, by cash, National Printing Co., Printing, envelopes and letterheads	31.50
51.	Dec. 5, by cash, Irene H. Snyder, Reporting, 1923 Session	200.00
52.	Dec. 6, by cash, F. E. Dillan, Reporting, 1923 Session	205.00
53.	Dec. 6, by cash, F. L. Van Sickle, Re-Imbursement of Petty Cash Fund	300.00
54.	Dec. 6, by cash, Mary S. Blair, Expense, attending Southern Med. Conv'n	7.61
55.	Dec. 6, by cash, John L. Pomering, Printing, Receipts, etc.	128.50
56.	Dec. 6, by cash, Evangelical Press, November Journal	1,341.37
57.	Dec. 6, by cash, National Printing Co., Printing bill heads	18.00
58.	Dec. 6, by cash, F. L. Van Sickle, Salary as Executive Secretary	416.67
59.	Dec 6, by cash, Mary S. Blair, Salary as Business Manager	166.67
60.	Dec. 6, by cash, Hyacinth Beard, Salary as Stenographer	110.00
61.	Dec. 6, by cash, F. L. Van Sickle, Rent, Headquarters Office	75.00
62.	Dec. 6, by cash, Jenkins Arcade Co., Rent, Secretary's Office	30.00
63.	Dec. 6, by cash, J. B. Lowman, Building & Loan Investment	100.00
64.	Dec. 6, by cash, Walter F. Donaldson, Reimbursement, Petty Cash Fund	200.00
65.	Dec. 6, by cash, Walter F. Donaldson, Salary as Secretary	450.00
66.	Dec. 6, by cash, B. J. Myers, Salary as Legal Counsel	75.00
67.	Dec. 6, by cash, Mary Hunter, Salary as Stenographer	85.00
68.	Dec. 6, by cash, Ida L. Little, Salary as Stenographer	75.00
69.	Dec. 6, by cash, J. B. Lowman, Salary as Treasurer	62.50
70.	Dec. 6, by cash, F. L. Van Sickle, 1923 Bonus on Advertising	629.81
71.	Dec. 31, by cash, H. W. Mitchell, Expense as Trustee	27.36
72.	Dec. 31, by cash, J. B. F. Wyant, Expense as Trustee	130.85
73.	Dec. 31, by cash, E. S. Joseph. Premium on Fire Insurance, Permanent Quarters	7.32
74.	Dec. 31, by cash, Evangelical Press, December Journal	1,292.19
75.	Dec. 31, by cash, Walter F. Donaldson, Expense, Trustee's Meeting	6.00

1924

Order No.		
76.	Jan. 17, by cash, F. L. Van Sickle, Salary as Executive Secretary	416.67
77.	Jan. 17, by cash, Mary S. Blair, Salary as Business Manager	166.67
78.	Jan. 17, by cash, Hyacinth Beard, Salary as Stenographer	110.00
79.	Jan. 17, by cash, F. L. Van Sickle, Rent, Headquarters	75.00
80.	Jan. 17, by cash, Jenkins Arcade Co., Rent, Secretary's Office	30.00
81.	Jan. 17, by cash, J. B. Lowman, Building & Loan Investment	100.00
82.	Jan. 17, by cash, Mary Hunter, Salary as Stenographer	85.00
83.	Jan. 17, by cash, U. S. National Bank, Rent, safety deposit box	3.00
84.	Jan. 17, by cash, J. E. Reed, Med. Defense Case No. 144	50.00
85.	Jan. 17, by cash, William A. Challener, Medical Defense Case No. 153	350.00
86.	Jan. 17, by cash, F. L. Van Sickle, Expense, State Editors' Conference	70.42
87.	Jan. 30, by cash. Elliott B. Edie, Expense, Com. on Public Relations	17.22
88.	Jan. 30, by cash. John L. Pomering, Printing Membership Cards	42.00
89.	Jan. 30, by cash, J. B. Lowman, Payment of loan from Medical Defense Fund with interest	2,017.50

Order No.		
90.	Jau. 30, by cash, Royal S. Haynes, Expense, 1923 Session	52.64
91.	Jan. 30, by cash, Evangelical Press, January Journal	1,326.64
92.	Jan. 30, by cash, Evangelical Press, Printing, Executive Secretary's Office	34.45
93.	Jan. 30, by cash, Evangelical Press, Printing, Executive Secretary's Office	2.67
94.	Feb. 20, by cash, Evangelical Press, Printing, Com. on Public Relations	24.50
95.	Feb. 20, by cash, Penna. State Chamber of Commerce, Annual Dues	25.00
96.	Feb. 20, by cash, H. W. Mitchell, Expense as Trustee	27.34
97.	Feb. 20, by cash, F. L. Van Sickle, Salary as Executive Secretary	416.66
98.	Feb. 20, by cash, Mary S. Blair, Salary as Business Manager	166.66
99.	Feb. 20, by cash, Hyacinth Beard. Salary as Stenographer	110.00
100.	Feb. 20, by cash, F. L. Van Sickle, Rent, Headquarters	75.00
101.	Feb. 20, by cash, Mary Hunter, Salary as Stenographer	85.00
102.	Feb. 20, by cash, Jenkins Arcade Co., Rent, Secretary's Office	30.00
103.	Feb. 20, by cash, J. B. Lowman, Building & Loan Investment	100.00
104.	Feb. 20, by cash, E. B. Heckel, Interest on Benevolence Fund	125.16
105.	Feb. 20, by cash, G. E. Curry, Expense, Com. on Scientific Work	27.00
106.	Mar. 3, by cash, Lawrence Litchfield, Expense, Com. on Public Relations	47.07
107.	Mar. 3, by cash, Thos. G. Simonton, Expense, Com. on Scientific Work	27.00
108.	Mar. 3, by cash, Umbel, Robinson, McKean & Williams, Medical Defense Case No. 130	250.00
109.	Mar. 19, by cash, Evangelical Press, Printing, Com. on Public Relations	49.00
110.	Mar. 19, by cash, Evangelical Press, February Journal	1,396.95
111.	Mar. 19, by cash, F. L. Van Sickle, Salary as Executive Secretary	416.66
112.	Mar. 19, by cash, Mary S. Blair, Salary as Business Manager	166.66
113.	Mar. 19, by cash, Hyacinth Beard, Salary as Stenographer	110.00
114.	Mar. 19, by cash, W. F. Donaldson, Salary as Secretary	450.00
115.	Mar. 19, by cash, Mary Hunter, Salary as Stenographer	85.00
116.	Mar. 19, by cash, Ida L. Little, Salary as Stenographer	75.00
117.	Mar. 19, by cash, J. B. Lowman, Salary as Treasurer	62.50
118.	Mar. 19, by cash, B. J. Myers, Salary as Legal Counsel	75.00
119.	Mar. 19, by cash, J. B. Lowman, Building & Loan Investment	100.00
120.	Mar. 19, by cash, F. L. Van Sickle, Rent, Headquarters	75.00
121.	Mar. 19, by cash, Jenkins Arcade Co., Rent, Secretary's Office	30.00
122.	Mar. 19, by cash, Elliott B. Edie, Expense, Com. on Public Relations	17.22
123.	Mar. 19, by cash, Evangelical Press, Printing, vouchers, etc.	30.60
124.	Mar. 28, by cash, Evangelical Press, Printing, Com. on Public Relations	75.00
125.	Mar. 28, by cash, Evangelical Press, March Journal	1,398.05
126.	Mar. 28, by cash, J. T. Bretz, City Treasurer, City Tax on Harrisburg Property	135.13
127.	Mar. 28, by cash, Warren D. Heinly, Floor Plan of Commercial Exhibit, Reading	25.00
128.	Apr. 16, by cash, American Surety Co., Premium on bond of Executive Secretary	6.25
129.	Apr. 16, by cash, F. L. Van Sickle, Salary as Executive Secretary	416.66
130.	Apr. 16, by cash, Mary S. Blair, Salary as Business Manager	166.66
131.	Apr. 16, by cash, Hyacinth Beard, Salary as Stenographer	110.00
132.	Apr. 16, by cash, F. L. Van Sickle, Rent, Headquarters	75.00
133.	Apr. 16, by cash. Jenkins Arcade Co., Rent, Secretary's Office	30.00
134.	Apr. 16, by cash, J. B. Lowman, Building & Loan Investment	100.00
135.	Apr. 16, by cash, Mary Hunter, Salary as Stenographer	85.00
136.	Apr. 16, by cash, William A. Challener, Med. Defense Case No. 164	200.00
137.	Apr. 16, by cash, Evangelical Press, Printing, Executive Secretary	60.74
138.	Apr. 16, by cash, F. L. Van Sickle, Re-imbursement, Petty Cash	300.00
139.	Apr. 16, by cash, F. L. Van Sickle, On account for 1924 Session	300.00
140.	May 13, by cash, Evangelical Press, April Journal	1,326.71
141.	May 13, by cash, Harnies & Salsbury, Premium on Workmen's Compensation Insurance	10.00
142.	May 13, by cash, F. L. Van Sickle, Salary as Executive Secretary	416.66
143.	May 13, by cash, Mary S. Blair, Salary as Business Manager	166.66
144.	May 13, by cash, Hyacinth Beard, Salary as Stenographer	110.00
145.	May 13, by cash, Mary Hunter, Salary as Stenographer	85.00
146.	May 13, by cash, F. L. Van Sickle, Rent, Headquarters	75.00
147.	May 13, by cash, Jenkins Arcade Co., Rent, Secretary's Office	30.00
148.	May 13, by cash, J. B. Lowman, Building & Loan Investment	100.00
149.	May 13, by cash, E. B. Heckel, Interest on Benevolence Fund	236.91
150.	May 13, by cash, Mary R. Martin, Stenographer, Commission on Compensation Law	30.00
151.	May 13, by cash, Alfred J. Shade, Repairing roof, Headquarters Building	26.90
152.	May 13, by cash, J. J. Maglauchlan, Painting, Headquarters Building	21.33
153.	May 13, by cash, E. C. Snyder, Building Table, Headquarters Building	19.00
154.	June 15, by cash, Dr. N. S. Weinberger, Expense, Com. on Scientific Work	56.40
155.	June 15, by cash, National Printing Co., Printing, Secretary's Office	22.00
156.	June 15, by cash, Evangelical Press, May Journal	1,566.69
157.	June 15, by cash, E. D. Siegrist, Med. Defense Case No. 162	150.00
158.	June 15, by cash, Glendon E. Curry, Expense, Com. on Scientific Work	27.00
159.	June 15, by cash, T. G. Simonton, Expense, Com. on Scientific Work	27.00
160.	June 15, by cash, Fred'k L. Van Sickle, Salary as Executive Secretary	416.66
161.	June 15, by cash, Mary S. Blair, Salary as Business Manager	166.66
162.	June 15, by cash, Hyacinth Beard, Salary as Stenographer	110.00
163.	June 15, by cash, Mary Hunter, Salary as Stenographer	85.00
164.	June 15, by cash, Ida L. Little, Salary as Stenographer	75.00
165.	June 15, by cash, Walter F. Donaldson, Salary as Secretary	450.00
166.	June 15, by cash, J. B. Lowman, Salary as Treasurer	62.50
167.	June 15, by cash, B. J. Myers, Salary as Legal Counsel	75.00
168.	June 15, by cash, J. B. Lowman, Building & Loan Investment	100.00
169.	June 15, by cash, Jenkins Arcade Co., Rent, Secretary's Office	30.00
170.	June 15, by cash, F. L. Van Sickle, Rent, Headquarters	120.00
171.	June 26, by cash, Horace H. Jenks, Expense, Com. on Scientific Work	18.50
172.	June 26, by cash, Elliott B. Edie, Expense, Com. on Public Relations	17.22
173.	June 26, by cash, Evangelical Press, Printing, June Journal	1,318.35
174.	July 14, by cash, F. L. Van Sickle, Salary as Executive Secretary	416.66
175.	July 14, by cash, Mary S. Blair, Salary as Business Manager	166.66
176.	July 14, by cash, Hyacinth Beard, Salary as Stenographer	110.00
177.	July 14, by cash, Mary Hunter, Salary as Stenographer	85.00
178.	July 14, by cash, J. B. Lowman, Building & Loan Investment	100.00
179.	July 14, by cash. Jenkins Arcade Co., Rent, Secretary's Office	30.00
180.	July 14. by cash, F. L. Van Sickle, Rent, Headquarters	90.00
181.	July 14. hy cash, Evangelical Press, Printing Bill Heads	6.40
182.	July 14, by cash, Charles Falkowsky, Jr., Expense, Com. on Scientific Work	19.64
183.	July 14, by cash, J. T. Bretz, School Tax, Harrisburg Property	210.00
184.	July 16. by cash, Office Equipment Co., Steel Shelving, Harrisburg Office	151.00
185.	July 31, by cash, Evangelical Press, July Journal	1,325.86
186.	July 31, by cash, National Printing Co., Printing Letterheads	17.25
187.	July 31, hy cash, Alex Scribner, Med. Defense Case No. 165	25.00
188.	July 31, bv cash. A. Coleman Sheetz, County Tax, Harrisburg	59.85
189.	July 31, by cash. Carol W. Simpson, Expense, Com. on Lab'ies	12.00
190.	Aug. 14, by cash, Dr. F. L. Van Sickle, Salary as Executive Secretary	416.66
191.	Aug. 14, by cash, Mary S. Blair, Salary as Business Manager	166.66
192.	Aug. 14, by cash, Hyacinth Beard, Salary as Stenographer	110.00
193.	Aug. 14, by cash, Mary Hunter, Salary as Stenographer	85.00
194.	Aug. 14, by cash, F. L. Van Sickle, Rent, Headquarters	90.00
195.	Aug. 14, by cash. Jenkins Arcade Co., Rent, Secretary's Office	30.00

Order No.		
196.	Aug. 14, by cash, J. B. Lowman, Building & Loan Investment	100.00
197.	Aug. 14, by cash, E. A. Shumway, Refund, Med. Defense Fund	485.25
198.	Aug. 14, by cash, R. R. Snowden, Expense, Com. on Scientific Work	52.00
199.	Aug. 14, by cash, Ira G. Shoemaker, Expense as Trustee	58.72
200.	Aug. 26, by cash, Dr. F. L. Van Sickle, Salary as Executive Secretary	416.70
201.	Aug. 26, by cash, Dr. W. F. Donaldson, Salary as Secretary	450.00
202.	Aug. 26, by cash, Dr. J. B. Lowman, Salary as Treasurer	62.50
203.	Aug. 26, by cash, B. J. Myers, Salary as Legal Counsel	75.00
204.	Aug. 26, by cash, J. B. Lowman, Building & Loan Investment	100.00
205.	Aug. 26, by cash, Mary S. Blair, Salary as Business Manager	166.70
206.	Aug. 26, by cash, Hyacinth Beard, Salary as Stenographer	110.00
207.	Aug. 26, by cash, Mary Hunter, Salary as Stenographer	85.00
208.	Aug. 26, by cash, Ida L. Little, Salary as Stenographer	75.00
209.	Aug. 26, by cash, F. L. Van Sickle, Rent, Harrisburg Office	90.00
210.	Aug. 26, by cash, F. L. Van Sickle, Expense, traveling	20.84
211.	Aug. 26, by cash, Frank C. Hammond, Expense, Com. on Morticians	23.00
212.	Aug. 26, by cash, Evangelical Press, August Journal	1,551.41
213.	Aug. 26, by cash, Theodore B. Appel, Expense as Trustee	3.83
214.	Aug. 26, by cash, W. S. Brenholtz, Expense as Trustee	62.44
215.	Aug. 26, by cash, Evangelical Press, September Journal, Est'd	1,650.00
216.	Aug. 26, by cash, J. G. F. Wyant, Expense as Trustee	52.64
217.	Aug. 26, by cash, L. Weber & Son, Gavel for retiring President	20.85
218.	Aug. 26, by cash, E. B. Heckel, Interest on Benevolence Fund	96.88
	Total disbursements for fiscal year	$45,050.95
	Aug. 26, 1924, by cash, Samuel A. Baltz, check No. 1568, issued July 9, 1920, in payment of Voucher No. 122 for year 1919-1920 for refund of dues, and entered as a receipt in year 1920-1921 because of non-collection, and now collected in present fiscal year	5.00
	Total Disbursements, General Fund	$45,055.95
	Balance on hand, September 1, 1924	$16,845.13

SPECIAL FUNDS

MEDICAL DEFENSE FUND

RECEIPTS

1923	
Sept. 1, to cash, balance on hand	$ 8,683.53
Sept. 28, to cash received from W. F. Donaldson	15.75
Oct. 13, to cash received from W. F. Donaldson	22.87
Oct. 16, to cash received from Interest—Liberty Bonds	63.75
Nov. 1, to cash received from Interest on deposit	145.88
Nov. 1, to cash received from W. F. Donaldson	5.25
Nov. 26, to cash received from W. F. Donaldson	2.88
Nov. 28, to cash received from Interest—Liberty Bonds	106.25
Dec. 5, to cash received from W. F. Donaldson	14.25
Dec. 12, to cash received from Interest—Wilkes-Barre Bonds	67.50
Dec. 28, to cash received from W. F. Donaldson	19.25
1924	
Jan. 4, to cash received from American Telephone & Telegraph Bonds	250.00
Jan. 5, to cash received from W. F. Donaldson	18.00
Jan. 17, to cash received from W. F. Donaldson	182.37
Jan. 31, to cash received from General Fund, in payment of loan, with interest	2,017.50
Feb. 2, to cash received from W. F. Donaldson	190.25
Feb. 18, to cash received from W. F. Donaldson	423.75
Mar. 4, to cash received from W. F. Donaldson	176.75
Mar. 19, to cash received from W. F. Donaldson	151.00
April 3, to cash received from W. F. Donaldson	415.50
April 16, to cash received from Interest on Liberty Bonds	63.75
April 19, to cash received from W. F. Donaldson	164.25
May 1, to cash received from W. F. Donaldson	33.75
May 1, to cash received from Interest on deposit	153.13
May 20, to cash received from W. F. Donaldson	6.50
June 9, to cash received from W. F. Donaldson	10.25
June 16, to cash received from Interest on Wilkes-Barre Bonds	67.50
June 16, to cash received from Interest on Liberty Bonds	106.25
June 16, to cash received from Interest on American Telephone & Telegraph Bonds	250.00
June 19, to cash received from W. F. Donaldson	18.00
July 3, to cash received from W. F. Donaldson	4.75
Aug. 6, to cash received from W. F. Donaldson	10.13
Aug. 21, to cash received from W. F. Donaldson	.25
Total receipts	$13,860.79

DISBURSEMENTS

1923	
Dec. 29, by cash, Loan to General Fund	$ 2,000.00
1924	
Jan. 17, by cash, For Medical Defense Case No. 144	50.00
Jan. 17, by cash, For Medical Defense Case No. 153	350.00
Mar. 3, by cash, For Medical Defense Case No. 130	250.00
Apr. 16, by cash, For Medical Defense Case No. 164	200.00
June 15, by cash, For Medical Defense Case No. 162	150.00
July 31, by cash, For Medical Defense Case No. 165	25.00
Aug. 14, by cash, For Refund to Philadelphia Society	485.25
Total disbursements	$ 3,510.25
September 1, 1924, balance on hand, Medical Defense Fund	$10,350.54

MEDICAL BENEVOLENCE FUND

RECEIPTS

1923	
Sept. 1, to cash, balance on hand	$ 1,606.44
Sept. 27, to cash received from Interest on Liberty Bonds	89.25
Sept. 28, to cash received from W. F. Donaldson	3.15
Oct. 13, to cash received from W. F. Donaldson	4.58
Oct. 16, to cash received from Interest on Liberty Bonds	106.25
Nov. 1, to cash received from Interest on Deposit	28.29
Nov. 1, to cash received from W. F. Donaldson	1.05
Nov. 26, to cash received from W. F. Donaldson	1.97
Nov. 28, to cash received from Interest on Liberty Bonds	74.37
Dec. 5, to cash received from W. F. Donaldson	2.85
Dec. 12, to cash received from Interest on Wilkes-Barre Bonds	22.50
Dec. 28, to cash received from W. F. Donaldson	15.05
1924	
Jan. 5, to cash received from W. F. Donaldson	18.00
Jan. 17, to cash received from W. F. Donaldson	177.88
Feb. 2, to cash received from W. F. Donaldson	189.65
Feb. 18, to cash received from W. F. Donaldson	423.15
Mar. 4, to cash received from W. F. Donaldson	176.75
Mar. 19, to cash received from W. F. Donaldson	150.40
Apr. 3, to cash received from W. F. Donaldson	414.90
Apr. 3, to cash received from Interest on Liberty Bonds	85.00
Apr. 3, to cash received from Interest on Liberty Bonds	4.25
Apr. 16, to cash received from Interest on Liberty Bonds	106.25
Apr. 19, to cash received from W. F. Donaldson	164.25
May 1, to cash received from W. F. Donaldson	33.75
May 1, to cash received from Interest on deposit	41.41
May 20, to cash received from W. F. Donaldson	6.50
June 9, to cash received from W. F. Donaldson	10.25
June 16, to cash received from Interest on Wilkes-Barre Bonds	22.50
June 16, to cash received from Interest on Liberty Bonds	74.38
June 19, to cash received from W. F. Donaldson	18.00
July 3, to cash received from W. F. Donaldson	4.75
Aug. 6, to cash received from W. F. Donaldson	10.12
Aug. 21, to cash received from W. F. Donaldson	.25
Total receipts	$ 4,088.14

DISBURSEMENTS

1923	
Oct. 13, by cash, Dr. E. B. Heckel, Interest rec'd	$ 89.25
Oct. 29, by cash, Dr. E. B. Heckel, Interest rec'd	106.25
1924	
Feb. 20, by cash, Dr. E. B. Heckel, Interest rec'd	125.16
May 13, by cash, Dr. E. B. Heckel, Interest rec'd	236.91
Aug. 26, by cash, Dr. E. B. Heckel, Interest rec'd	96.88
Total disbursements	$ 654.45
September 1, 1924, balance on hand, Medical Benevolence Fund	$ 3,433.69

ENDOWMENT FUND

RECEIPTS

1923	
Sept. 1, to cash, balance on hand	$ 372.59
Nov. 1, to cash, Interest on deposit	5.46
Nov. 28, to cash, Rec'd Interest on Liberty Bonds	21.25
Dec. 15, to cash, Rec'd Interest on Liberty Bonds	106.25
1924	
May 1, to cash, Rec'd Interest on Deposit	8.16
June 16, to cash, Rec'd Interest on Liberty Bonds	21.25
June 17, to cash, Rec'd Interest on Liberty Bonds	106.25
Total receipts	$ 641.21
Total disbursements	......
September 1, 1924, balance on hand, Endowment Fund	$ 641.21

CLASSIFIED STATEMENT OF RECEIPTS

September 1, 1923, to September 1, 1924

GENERAL FUND

Cash on hand September 1, 1923		$ 4,521.88
Received from Dr. W. F. Donaldson, for membership per capita tax	$33,027.00	
Received from Dr. F. L. Van Sickle, account of Executive Secretary and Editor	20,111.62	
Received loan from Medical Defense Fund	2,000.00	
Received from Interest on daily balances	75.88	
Received from Special Funds, in payment of Vouchers drawn against said Funds	2,164.70	57,379.20
Total		$61,901.08

MEDICAL DEFENSE FUND

Cash on hand September 1, 1923		$ 8,683.53
Received from Dr. W. F. Donaldson, for membership per capita tax	$ 1,885.75	
Received from Interest on Investments	992.50	
Received from Interest on Deposits	299.01	
Received from payment of loan to General Fund	2,000.00	5,177.26
Total		$13,860.79

MEDICAL BENEVOLENCE FUND

Cash on hand September 1, 1923		$ 1,606.44
Received from Dr. W. F. Donaldson, for membership per capita tax	$ 1,827.25	
Received from Interest on Investments	584.75	
Received from Interest on Deposits	69.70	2,481.70
Total		$ 4,088.14

ENDOWMENT FUND

Cash on hand September 1, 1923		$ 372.59
Received from Interest on Investments	$ 255.00	
Received from Interest on Deposits	13.62	268.62
Total		$ 641.21
Total receipts		$80,491.22

CLASSIFIED STATEMENT OF EXPENDITURES

September 1, 1923, to September 1, 1924

GENERAL FUND

Journal for year		$16,925.17	
Endowment Fund, for investment		1,200.00	
Current expenditures for Special Funds		2,164.70	
Salaries:			
Executive Secretary	$5,000.00		
Secretary	1,800.00		
Treasurer	250.00		
Legal Counsel	300.00		
Business Manager	2,000.00		
Stenographers	2,635.00		
		11,985.00	
Expense, Rent		1,350.00	
Expense, Improvements to Harrisburg Property		270.00	
Expense, Repairs and Painting, Harrisburg Property		48.23	
Expense, Taxes, Harrisburg Property		404.98	
Expense, Fire Insurance Property		7.32	
Expense, Compensation Insurance		10.00	
Expense, Annual Meeting of 1923		5,091.15	
Expense, Annual Meeting of 1924		345.85	
Expense, Committees, Councilors and Trustees		1,225.03	
Expense, Bonus to Executive Secretary for Advertising		629.81	
Expense, Printing, Offices of Secretary and Executive Secretary		393.09	
Expense, Premiums on bonds of Officers		56.25	
Expense, Travelling Expenses of Officers		98.87	
Expense, Annual Dues to State Chamber of Commerce		25.00	
Expense, Rental of Safe Deposit Box		3.00	
Expense, Refund of dues for 1920-1921		5.00	
Expense, Petty Cash		800.00	
Repayment of Loan from Medical Defense Fund with interest		2,017.50	
Total			$45,055.95

SPECIAL FUNDS

Expended in addition to items listed under General Fund the following:	
Medical Defense Fund—Loan to General Fund	$ 2,000.00
Total expenditures from September 1, 1923, to September 1, 1924	$47,055.95

STATEMENT OF CASH BALANCES AND INVESTMENTS

September 1, 1924

CASH

General Fund	$16,845.13	
Medical Defense Fund	10,350.54	
Medical Benevolence Fund	3,433.69	
Endowment Fund	641.21	
		$31,270.57

MEDICAL DEFENSE FUND

Wilkes-Barre City Improvement Bonds, Nos. 96, 97 and 98, Series 1, 4½%, Par Value, $1,000.00	$ 3,000.00	
American Telephone & Telegraph, 1946 Series, 5%	10,000.00	
Liberty Bonds	8,000.00	
		21,000.00

MEDICAL BENEVOLENCE FUND

Wilkes-Barre City Improvement Bond No. 94, 4½%	$ 1,000.00	
Liberty Bonds	12,700.00	
		13,700 00

ENDOWMENT FUND

100 Shares Peoples' Building & Loan Association Stock, 93 Instalments paid	$ 9,300.00	
Liberty Bonds	6,000.00	
		15,300.00

REAL ESTATE

Building and ground, 230 State Street, Harrisburg: Purchased in 1923 at	$17,000.00	
Repairs and improvements made in 1923	4,394.91	
Improvements during present year	270.00	
		21,664.91
Total cash balances and investments, September 1, 1924		$102,935.48

SUMMARY STATEMENT OF CASH BALANCES, RECEIPTS AND EXPENDITURES

September 1, 1923, to September 1, 1924

	Total	General Fund	Medical Defense Fund	Medical Benevolence Fund	Endowment Fund
Cash balance, September 1, 1923	$15,184.44	$ 4,521.88	$ 8,683.53	$ 1,606.44	$ 372.59
Receipts:					
From Dr. W. F. Donaldson, for membership per capita tax	$36,740.00	$33,027.00	$ 1,885.75	$ 1,827.25	....
From Dr. F. L. Van Sickle, for account of Executive Secretary and Editor	20,111.62	20,111.62	....	....	....
From Interest on Investments and Deposits	2,290.46	75.88	1,291.51	654.45	268.62
From Loan from Special Fund to General Fund	2,000.00	2,000.00	....	....	....
From Repayment of Loan to Special Fund	2,000.00	....	2,000.00	....	....
Total receipts, September 1, 1923, to September 1, 1924	$63,142.08	$55,214.50	$ 5,177.26	$ 2,481.70	$ 268.62
Total receipts, including balances, September 1, 1923	$78,326.52	$59,736.38	$13,860.79	$ 4,088.14	$ 641.21
Transfers of Funds	....	2,164.70†	1,510.25*	654.45*	....
Total balances and receipts	$78,326.52	$61,901.08	$12,350.54	$ 3,433.69	$ 641.21
Expenditures, September 1, 1923, to September 1, 1924	47,055.95	45,055.95	2,000.00	....	....
Balances, September 1, 1924	$31,270.57	$16,845.13	$10,350.54	$ 3,433.69	$ 641.21

*Transferred from.

†Transferred to.

Respectfully submitted,

J. B. Lowman, *Treasurer.*

REPORT OF THE CHAIRMAN OF THE BOARD OF TRUSTEES

To the President and House of Delegates:

The Board of Trustees organized for the year just closed on October 4, 1923, by electing J. B. F. Wyant Chairman, and Donald Guthrie Clerk. No new members were added to the Board of Trustees, Drs. Appel and Guthrie being elected to succeed themselves for a term of five years.

The Chairman appointed the following standing committees for the year: Finance, Drs. Albertson, Guthrie and Brenholtz; Publication, Drs. Shoemaker, Appel and Hammond; On Conduct of Executive Secretary's Office, Drs. Mitchell, Moyer and Quigley.

The Board held its regular meetings at the permanent headquarters in Harrisburg in December, February and May. The attendance at all meetings was full, and the keenest interest on the part of the members in the interim conduct of the affairs of the Society was at all times manifest.

We received from time to time reports of standing committees, such as the Committee on Public Health Legislation and the Committee on Public Relations. The Board at all times gave its earnest coöperation and assured the workers of the Society of the necessary financial support.

The meetings of active committees, as that on Compensation Laws, Public Relations and Scientific Work, were held at such times as to make it possible for members of your Board to meet in Harrisburg with these active workers.

Since our last meeting our Board has sustained a great loss in the sudden and unexpected death of Dr. Irwin J. Moyer, of Pittsburgh, Councilor and Trustee for the Sixth District. The records of our Board's activities during the nine years of Dr. Moyer's service as Trustee and Councilor record his faithful attendance and his unfailing devotion to every duty allotted to him. The choice of a successor to fill the unexpired term of Dr. Moyer devolves upon the 1924 House of Delegates—no small task, if it is adequately to fill the vacancy created by the death of Dr. Moyer. The Sixth District geographically is a large district, and contains approximately seventeen hundred and fifty members. Not only was Dr. Moyer a frequent visitor to the Societies in his district, but he was called upon to assist in the consideration and conduct of the defense of many of our applicants for assistance. Forty per cent of the applications for defense against suits for alleged malpractice that we are called upon to consider originate in the Sixth Councilor District.

J. B. F. Wyant, *Chairman.*

REPORTS OF INDIVIDUAL COUNCILORS

DR. FRANK C. HAMMOND, PHILADELPHIA, COUNCILOR FOR THE FIRST DISTRICT

To the President and the House of Delegates:

The stated scientific meetings of the Philadelphia County Medical Society were regularly held and well attended, and the programs rendered were of uniform excellence. Abstracts of the papers read at the scientific meetings were sent for publication to the Atlantic Medical Journal, and in every case were published also in the Weekly Roster as soon after the meeting as possible. The Roster files may be used as a reference, therefore, in compiling any further data in regard to the papers read.

A number of cases for medical defense have been successfully defended. No cases have been lost. Several are in process of being referred to the higher court. The Board of Directors has ruled that to those members who carry liability insurance the Society shall give its moral support but not the active support of conducting the trial through the attorney for the county society.

The Executive Secretary of the Society continues to render most efficient service.

All publicity pertaining to the Society is now censored and given to the papers through its Committee on Publicity.

A fund of $250.00 was appropriated by the Board of Directors for the Committee on Public Policy and Legislation for the investigation of alleged fraudulent practitioners.

The Board of Directors passed a resolution endorsing the work of the Commission on Workmen's Compensation appointed by President Frontz of the Medical Society of the State of Pennsylvania.

The Committee on Affiliation of Dentists made a report to the Board of Directors, which was accepted and recommendation made to the Society that the bylaws be changed that dentists might be admitted as associate members. A committee was appointed to formulate the necessary changes in the by-laws.

DR. HARRY W. ALBERTSON, SCRANTON, COUNCILOR FOR THE SECOND DISTRICT

To the President and House of Delegates:

Interest in organized medicine and its many branches and activities has in no sense waned during the past twelve months in the Second Councilor District.

There are eight active societies in the nine counties comprising this district, seven of which are well organized, hold regular weekly, semi-monthly or monthly meetings, one society holding meetings only at the call of the President.

Upon the occasion of my annual visit to these societies during the past year, I have endeavored to emphasize the advantage of medical organization and the many benefits to be derived therefrom, and everywhere I have found a growing interest and a spirit of helpful coöperation.

At all the meetings I have attended the programs have been of a high scientific order, and have shown much thought and care in preparation and arrangement.

The Lackawanna County Medical Society has again during the past winter conducted a very successful postgraduate course, which was well attended and much interest shown. Several of the societies visited have made inquiries concerning postgraduate work, and have expressed the hope that classes might be formed within their ranks.

Everywhere much interest is manifest in what the State Society is doing or contemplating in a political way, and I find the physicians very active in this district in endeavoring to shape the minds of those seeking legislative office to the necessity of legislation which will be of far greater benefit to the public in giving them honest and efficient medical service.

There have been no applications for medical defense in this district during the past year, and the one or two cases now pending will in all probability never come to trial, as in my opinion they have no merit in fact.

I consider matters in a healthy state in the Second District, and I feel confident that the profession will lend itself to any worthy movement for the advancement of medical science or the improvement of public health.

DR. IRA G. SHOEMAKER, READING, COUNCILOR FOR THE THIRD DISTRICT

To the President and the House of Delegates:

Conditions in the Third District are such that a detailed report is unnecessary. The meetings of the county societies are well attended and an apparent interest is manifest. There have been no censorial meetings held this year. All the societies in the Third Councilor District have been visited. No suits for alleged malpractice have been instituted. The Berks County Society is celebrating its one hundredth anniversary this year and is putting forth every effort to make the visit of the seventy-fourth annual session of the State Society, to be held at Reading, a very pleasant one.

DR. THEODORE B. APPEL, LANCASTER, COUNCILOR FOR THE FOURTH DISTRICT

To the President and House of Delegates:

Society affairs in the Fourth Councilor District have been quiet during the past year. The several societies have been functioning. The Fourth Censorial District had its annual meeting at Harrisburg with the Dauphin County Society, at which time there was a good attendance.

During the year, one of the cases for malpractice was called for trial, but by the advice of the attorney representing the interests of the State Society, as well as the insurance company involved, the case was compromised. In this particular case the evidence for the defense was not sufficient to relieve the physician involved of responsibility. In connection with this experience, it is pointed out that it is the duty of the censors of the county societies, when an application is made for the assistance of the state society in the defense of one of its members from a malpractice suit, not only to certify that the member is in good standing in his society, but also to determine whether or not there is reasonable ground for a successful and legitimate defense. In this particular case, had such an investigation been carried out, under our rules, the officers of the society would probably not have appeared, but would have advised at the outset what became necessary later; namely, that settlement should be made. This investigation by the censors should, in the opinion of the Councilor, include not only statement of the defendant as to the facts of the case, but also corroborative evidence from other sources that the defendant was not culpable.

DR. JOHN M. QUIGLEY, CLEARFIELD, COUNCILOR FOR THE FIFTH DISTRICT

To the President and House of Delegates:

On November 8, 1923, I attended the annual banquet of the Cambria County Medical Society. This meeting was well attended and the principal speaker was Dr. Charles H. Miner, Secretary of Health for the State of Pennsylvania. This society, the largest in the district, has a membership of one hundred and forty, an increase of five over last year. There are eighteen eligible nonmembers in the county. One death occurred during the year, Dr. A. F. Dunsmore, of Barnesboro. They held twelve meetings, with an average attendance of forty-seven, and paid $135.00 to the Legislative Conference.

On March 4, 1924, I attended the Fiftieth Anniversary of the Mifflin County Medical Society at Lewistown. This meeting, attended by a large number of members and their wives, was most interesting. This society has a membership of twenty-four, a decrease of one, caused by the death of Dr. S. M. Hazlett, of Allensville. They held twelve meetings during the year, with an average attendance of twelve.

On May 6th, I attended the meeting of the Juniata County Medical Society, which was called especially that I might meet with them on my way home from the meeting of the Board of Trustees. They have but thirteen members, an increase of one over last year, and have but one eligible nonmember in the county. They have held but three meetings during the year, with an average attendance of six, but are planning for a joint outing with the Perry County Medical Society in the near future. They have not yet remitted to the Legislative Conference, but are ready with their contribution.

I have met with the Clearfield County Medical Society monthly. This society has a membership of sixty-seven active and one honorary member, and has held, up to July 1st, eight meetings, with an average attendance of thirty-one. They are planning to celebrate the sixtieth anniversary of the society this fall. They have contributed to the Legislative Conference $66.00.

Early in June, I visited a meeting of the Center County Medical Society at a club house near State College. This society has a membership of twenty-four. During the year they have had two deaths, Dr. C. S. Musser and Dr. J. R. G. Allison. They have held ten meetings, with an average attendance of seven.

I have not yet met with Huntingdon, Perry or Blair County Societies, but hope to do so before the State Society meeting in October.

Huntingdon County Society has thirty-nine members and has four eligible nonmembers in the county. They have had eleven meetings, with an average attendance of twelve. They are active along all lines and are in a thriving condition.

Perry County Society has a membership of fifteen, an increase of one over last year. They have had one death, Dr. F. A. Gutshall, of Blaine. They have five eligible nonmembers in the county. They have held four meetings, with an average attendance of five.

Blair County Society has an active membership of ninety, an increase of six over last year, and two affiliate members. They have five eligible nonmembers in the county. They have had twelve meetings, with an average attendance of thirty-five. This is a live society.

On July 31, 1924, I met the secretaries and district censors of the District at Huntingdon, and we planned for the Censorial District and Councilor District meetings. It was decided to combine the two Censorial and Councilor District meetings in one at the Blairmont Club, near Hollidaysburg about September 17, 1924, and each of the eight societies will take its part in the meeting and help to make it a success in every way. We are encouraged to believe that this will be the biggest event we have ever held in this District.

We have had but one suit for alleged malpractice since I have been Councilor. This is against one of our members in Cambria County and has only begun, but I feel certain that if it comes into court it will not amount to anything.

We are proud of the work of our District as a whole and feel that we are progressing in every way and that we shall continue to do so.

We had a good representation at the State Society meeting at Pittsburgh, and I hope and believe we shall have a better representation at Reading.

*DR. IRWIN J. MOYER, PITTSBURGH, COUNCILOR FOR THE SIXTH DISTRICT

(See Secretary's report.)

DR. HARRY W. MITCHELL, WARREN, COUNCILOR FOR THE SEVENTH DISTRICT

To the President and House of Delegates:

The Councilor for the Seventh District is pleased to report that from the standpoint of medical organization, conditions are most favorable, a high percentage of eligible physicians being members of the county societies, the various meetings being regularly arranged and the attendance being good. A fine coöperative spirit can be depended on in response to any request of the State Society for joint assistance of the several county societies. A few combined meetings have been held and others are being planned for during the present year. Lack of good roads prevented more of these meetings.

No threatened suits for malpractice have appeared, and the amicable professional relations shown in all the societies are such that the services of the Judicial Council have not been required.

DR. DONALD GUTHRIE, SAYRE, COUNCILOR FOR THE EIGHTH DISTRICT

To the President and House of Delegates:

Your Councilor has visited all the county societies in the Seventeenth Censorial District, but has been unable to visit any in the Eighteenth Censorial District, except Montour. Communications, however, show the conditions of these societies to be good. There have been no suits for alleged malpractice during the year in the Eighth Councilor District.

DR. JAY B. F. WYANT, KITTANNING, COUNCILOR FOR THE NINTH DISTRICT

To the President and House of Delegates:

The component county medical societies comprising the Ninth District—Clarion, Indiana, Jefferson, Venango, Butler and Armstrong—are societies of unusual interest, and hold regular meetings with fair attendance. The Councilor has not been able to pay official visits to each society, but was well pleased with the ones visited and hopes to visit all before the end of the year. Some of the societies have some prominent physician or surgeon hold a clinic or read a paper at specially designated times, which adds much to the interest and the attendance.

Suit for alleged malpractice is pending against one of our members. Whether anything will come of it remains to be seen.

Much interest has been awakened by the discussion of the One Board Bill, and our members are willing to help in every way possible. They have used their influence with their representatives and look forward in happy anticipation to the forthcoming results.

One man located in one of our counties had no license to practice medicine. He was visited by the censors and advised to get his credentials, which he failed to do. At the trial he plead guilty and was fined and admonished by the court to cease from practice.

The censors of the Thirteenth and Fourteenth Censorial Districts are planning a meeting for September.

DR. WALTER S. BRENHOLTZ, WILLIAMSPORT, COUNCILOR FOR THE TENTH DISTRICT

To the President and House of Delegates:

The condition of the societies comprising the Twelfth and Fifteenth Censorial Districts has been extremely good during the past year. Your Councilor has visited all the societies with the exception of one, Union County Society.

The attendance at the meetings of all the societies visited was very good and the same attendance has prevailed during the year. Regular meetings have been held and scientific programs were carried out. There has not been any increase in membership in the Tenth District as the number of new members is a few less than the loss sustained by death and removal.

Much interest has been shown by the members of the various societies and the meetings have been more regular during the past year. Union County Society is doing better in the matter of holding meetings, having held three meetings so far this year.

Visits were made during the year as follows: Tioga Society, at Blossburg, May 6th; Potter Society, at Coudersport, May 13th; Clinton Society, at Lock Haven, May 23d; McKean Society, at Bradford, June 4th; Elk Society, at Ridgway, June 12th, and Lycoming Society, every month of the year. At all these meetings, I tried to present as forcibly as possible: (1) the One Board Bill, (2) diphtheria prevention, (3) cancer prevention, (4) holding of public health meetings as outlined by the Committee on Public Relations, (5) importance of every society having a committee on public relations. The last, but by no means the least important subject presented and urged, was periodic health examinations of the apparently healthy. All of these subjects were emphasized, and the members of the various societies promised to do what they are able along the lines suggested.

The Twelfth Censorial District was urged to hold a meeting during the summer, a committee being appointed in each society to make such arrangements, but as yet the meeting has not been called. A meeting of the Fifteenth Censorial District will be held at Lock Haven, August 28th, in conjunction with the annual meeting of the West Branch Medical Association.

We are glad to report that there have been no suits for alleged malpractice in our district this year.

All of the societies of the Tenth Councilor District are contributing to the support of the Medical Legislative Conference, and the members agreed to do what they are able to assist in securing proper action on legislative matters by the coming legislature.

The Councilor for the Tenth District takes this opportunity to congratulate the officers of the various county societies of the Tenth District for their activities during the year and the hearty coöperation and support of the entire membership given to the many activities of the Medical Society of the State of Pennsylvania.

REPORTS OF DELEGATES TO OTHER SOCIETIES

REPORT OF DELEGATES TO THE 1924 SESSION OF THE AMERICAN MEDICAL ASSOCIATION

To the President and House of Delegates:

Pursuant to a recommendation of the Board of Trustees, the Pennsylvania delegation to the 1924 House of Delegates of the American Medical Association met and organized prior to its attendance upon the first meeting in Chicago, June 9, 1924.

Each of the first two meetings held was attended by seven delegates. The proportion of duly elected delegates serving this year was possibly much better than in former years, thereby vindicating the earlier recommendation of the Board of Trustees of the Medical

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* Deceased June 30, 1924.

Society of the State of Pennsylvania to our own House of Delegates to the effect that delegates chosen from our own Society to the American Medical Association should be "representative members, qualified by medical organization experience to serve promptly, efficiently and continuously."

Our delegation of nine, composed as follows, contained but two alternates: John A. Campbell, Williamsport (alternate); C. C. Cracraft, Claysville; Walter F. Donaldson, Pittsburgh; Edward B. Heckel, Pittsburgh; J. Newton Hunsberger, Norristown; John D. McLean, Harrisburg; William H. Mayer, Pittsburgh; S. P. Mengel, Wilkes-Barre; J. H. Murray, Punxsutawney (alternate).

The 1924 session of the House of Delegates of the American Medical Association was remarkable for its harmonious action on the reports, recommendations and resolutions reviewed and approved by the various reference committees of the House.

Our delegation had representatives on two reference committees of the House of Delegates, and one of our delegates, Edward B. Heckel, who has served many times as a delegate, was elected to the Board of Trustees of the American Medical Association.

Without exception, our delegates served faithfully in all sessions of the House, being seated and voting nearly always as a unit.

By the triennial reapportionment of delegates from constituent state medical associations, our Society will, during the next three years, be entitled to eight delegates, one less than under the last reapportionment. The reapportionment this year was made on the basis of one delegate for each nine hundred and fifty members or fraction thereof. Proposed amendments to the constitution and by-laws providing for an increase in the voting membership of the House of Delegates now pending for action in 1925 may result in a new reapportionment.

Edward B. Heckel, *Chairman,*
Walter F. Donaldson, *Clerk.*

REPORT OF THE DELEGATE TO THE PENNSYLVANIA DENTAL SOCIETY

To the President and House of Delegates:

Your delegate to the Pennsylvania Dental Society attended the annual meeting of that organization, which was held in Syria Mosque, Pittsburgh, May 13, 14 and 15, 1924. The meeting was opened by addresses of welcome from prominent citizens, following which your delegate was introduced to the Society in a very cordial speech by President Fickes.

In response, your delegate attempted to convey to the audience that it was the desire of the Medical Society of the State of Pennsylvania as a body and of its members as individuals to promote closer coöperation between physicians and dentists. The practice of dentistry is closely interlocked with the practice of medicine. The treatment of a patient's teeth is often a complication of the treatment of other disease, and the best interests of the patient often depend on the careful consideration of the dependence of various disease conditions on each other. For this reason, frequent and free consultations between dentists and physicians are very desirable.

In closing, your delegate invited the Dental Society to send a representative to our annual meeting in Reading, October, 1924.

These remarks were very graciously received, the privileges of the floor were extended to your delegate for the remainder of the meeting and everything possible done to make him feel that he was welcome. Your delegate believes that pleasanter relationships between dentists and physicians are promoted by this exchange of courtesies, and earnestly hopes that they will be continued. George W. Grier.

REPORT OF THE DELEGATE TO THE WEST VIRGINIA STATE MEDICAL ASSOCIATION

To the President and House of Delegates:

As your delegate, I attended the opening day of the 1924 meeting of the West Virginia State Medical Association in Wheeling and made an address in the name of the Medical Society of the State of Pennsylvania, extending the greetings of Pennsylvania to West Virginia, the hope that their Society would be well represented at our meeting at Reading and that as the years go on the profession in the two states would coöperate more and more for the same ends. I took occasion to outline some of the activities of our State Society, such as the Public Relations Committee and our effort to get the medical profession more interested in legislative matters. If I may judge by the reception and courtesy that were shown to me, I should say that the Medical Association of the State of West Virginia has a very kindly feeling for their neighbors to the north and east of them. Lawrence Litchfield.

REPORT OF THE DELEGATE TO THE MEDICAL SOCIETY OF NEW JERSEY

To the President and House of Delegates:

The One Hundred and Fifty-Eighth Annual Session of the Medical Society of New Jersey, the oldest state society in America, organized in 1766, convened at Atlantic City June 6-8, 1924. In point of registration, exhibits and papers, it was conceded to have been the most successful meeting ever held. Our reception was cordial and we were accorded the floor. We outlined the advantages to be derived from a closer relationship which would obtain between our societies in the joint publication of the Atlantic Medical Journal. The membership of the Society is in round numbers 2,000. In the matter of legislation they have encountered the same difficulties as Pennsylvania. Their Welfare Committee, which attends to all matters of legislation, is very active. During the session of the Legislature they held weekly meetings, and have been in close touch with the Governor, who is openly in sympathy with all efforts toward raising the standards governing the practice of the healing art, a relationship for which the commonwealth is to be congratulated. The expenses of the committee were approximately $5,000.00 which, when their total society membership is considered, were very large. They are advocating an active publicity compaign with a view to educating the public, and are gathering data and evidence for the prosecution of illegal practitioners.

Their badge system is a good one. The badge consists of a pin with a slot for holding a name and address card, to which is attached a ribbon; by this means one is never at a loss to know to whom he is speaking. Delegates are nominated by the component county societies and elected by the House of Delegates.

Financially the Society is in excellent condition, there being $18,000.00 in their treasury. The annual assessment is $5.00. Their Journal is a paying proposition, the net cost to the Society being but 88 cents per member. This is accounted for by their low overhead expense. The Publication Committee, with the Editor, who receives $2,000.00 annually, do all the detail work.

All papers were read in one section. Besides those read by local men, there were three which were of extreme interest. Dr. Beardsley, of Philadelphia, in his "Oration on Medicine," summarized his findings on why the cults flourish as being due mainly to the indifference of the medical man toward his patients. Dr. Bloodgood, of Baltimore, in his "Oration on Surgery," dwelt largely on the treatment of benign and malignant growths by the actual cautery. Mr. George W. Whiteside, counsel for the Medical Society of New York, gave a talk on "Enforcing the Medical Practice Act," which was well worth hearing.

From our observation of the meeting, we would suggest the desirability of continuation of representation from our Society to the Medical Society of New Jersey. Respectfully submitted,

Ira G. Shoemaker.

REPORT OF THE CONFERENCE COMMITTEE WITH THE PENNSYLVANIA PHARMACEUTICAL COMMITTEE

To the President and House of Delegates:

The Conference Committee appointed to represent the Medical Society of the State of Pennsylvania at the annual meeting of the Pennsylvania Pharmaceutical Association held at Bethlehem, June 18, 1924, submits the following report:

Your Conference Committee was greeted very cordially by the Conference Committee of the Pennsylvania Pharmaceutical Association and the members of the Association present.

Mr. Ambrose Hunsberger, of Philadelphia, President of the association and an associate member of the American Medical Association, in his remarks spoke of the splendid reception accorded him at the 1923 meeting of our Society in Pittsburgh, and of the closer relationship between physicians and pharmacists being brought about by these conferences.

Throughout the meeting there was a strong sentiment that the pharmacists would be willing to assist the medical profession in any matters pertaining to the welfare of the general public, such as affairs pertaining to public health, advising periodic physical examinations, extermination of cults and the elimination of objectionable proprietary medicines.

The committee feels that much good may be accomplished by continuing these conferences with the Pennsylvania Pharmaceutical Association.

John W. Kauffman, *Chairman.*
J. Treichler Butz,
George A. Knowles.

REPORTS OF COMMITTEES

COMMITTEE ON PUBLIC HEALTH LEGISLATION

To the President and House of Delegates:

The Committee on Public Health Legislation, appointed by President Frontz, organized and again united with similar committees from the Homeopathic Medical Society of Pennsylvania and the Eclectic Medical Society of Pennsylvania to form the Medical Legislative Conference.

In pursuance of the motion passed by the House of Delegates in October, 1923, and upon the advice of the Board of Trustees of the Society, the Chairman of the Committee on Public Health Legislation engaged James A. Walker, Esq., of Philadelphia, to draft a One Board Medical Bill.

This bill will be presented to the 1924 House of Delegates, and if approved, will be presented to the Legislature of Pennsylvania, which convenes in January, 1925. George A. Knowles, *Chairman.*

COMMITTEE ON PROMOTION OF EFFICIENT LAWS ON INSANITY

To the President and House of Delegates:

During the past year, in the interval between legislative sessions, there has been no opportunity for any direct activity on the part of our committee, which has kept in close touch with the policies of the Bureau of Mental Health of the Welfare Department. The officers of the department have prepared a program of expansion that alone can suffice to correct an existing state of affairs not creditable to the State of Pennsylvania. This statement can be best demonstrated by comparison with the state of affairs in New York, which state has beds available for the care of mental cases in the proportion of 1 to 235 of the population, while Pennsylvania has only 1 to 400, including all the county homes licensed to care for such mental cases. It results that literally thousands of mentally diseased or defective persons, who in New York would have medical and custodial care, are living in the community to the detriment of their own and the public welfare.

It would require approximately 10,000 more beds for Pennsylvania to equal the facilities now afforded by the State of New York for the care and treatment of the insane, epileptics and feeble-minded. In the last complete fiscal year, New York expended $17,149,838.00 for the maintenance of indigent mental cases, and in addition voted a bond issue of $50,000,000.00 to improve and enlarge its conveniences for these patients. During this period, the State of Pennsylvania expended, from the State Treasury, for the same purpose, the sum of $4,012,086.00, to which should be added a considerably smaller sum to give the total amount. New York had 48,995 indigent mental patients, while Pennsylvania with only 10% less population, had 26,348 patients. Such differences are due largely to the fact that in New York complete state care of mental cases has been followed for thirty years, while in Pennsylvania the old system of combined state and county care remains in vogue. The result is that neither state nor county, singly or in combined effort, meets the needs of the state, excepting in the proportion indicated by the above statement of fact.

Officers of the Welfare Department have informed the committee that they are disposed to initiate legislation calling for complete state care in Pennsylvania to become fully operative at some future date, when arrangements can be completed to the best advantage of both state and counties. This step is not an innovation, but merely follows precedent now almost universal in the United States.

The committee hopes that the medical profession will unite in the support of better provision for psychiatric practice, even as they have in the past for other forms of illness. Better care for individual cases and conservation of the mental health of the state are the goals sought by the proposed change in Pennsylvania laws and practice.

Harry W. Mitchell, *Chairman,*
Owen Copp,
Edward E. Mayer,
J. Allen Jackson.

COMMITTEE ON PUBLIC RELATIONS

To the President and House of Delegates:

The Committee on Public Relations has continued its efforts so to coördinate and utilize the power of the Medical Society of the State of Pennsylvania and its component county societies that not only may the public be safeguarded against morbidity and mortality, but that organized medicine may be given credit for the major part it plays in the accomplishment of this end. In accordance with this general policy, communications have been sent to all the secretaries of the county societies, suggesting that in each the coördinating strength of the society should be directed towards (1) lessening the incidence and mortality of diphtheria; (2) reducing to a reasonable, or even to a creditable percentage, infant mortality; and (3) popularizing periodic physical examinations. It has been suggested that for each of these activities a small committee of active, enthusiastic men be appointed, and by enrolling of civic organizations, including those devoted to the interest of labor, in an active campaign, and by securing the support of the local press insure popular approval of preventive and curative measures and engender an active interest in these measures on the part of the profession at large.

There has been no response in the majority of the county societies, nor does there seem to be a general understanding of the importance to organized medicine of demonstrating to the public at large that medical organizations have, as organizations, views and policies other than those bearing on their own direct scientific or financial profit.

The committee has sent out, through Mr. James Maurer, to lodges, numbering 500,000 workmen, some 70,000 copies of Diphtheria Lessons prepared by Dr. J. Bruce McCreary. From the important public service rendered in some counties by the county medical societies, the committee is not without hope that this example may spread to lethargic and comatose organizations in such wise that they too will be recognized as public benefactors and may receive the political support and the social respect which is the just meed of such service.

Edward Martin, *Chairman*,
Lawrence Litchfield,
Frederick L. Van Sickle,
Elliott Edie,
Wilmer Krusen,
Samuel R. Haythorn,
Frank G. Hartman,
Francis J. Dever,
Walter M. Bortz.

COMMITTEE ON MEDICAL BENEVOLENCE

To the President and House of Delegates:

The Committee on Medical Benevolence reports that they have three beneficiaries now on their list, two having been added during the past year. Several inquiries have been made concerning the benefits of this fund by members of the Society or their families, indicating that there is an increased interest in this feature of the work of the Society. We believe that a larger amount of work could be done properly, and a larger appropriation for the purpose could be used to advantage, if it were available. The committee feels that if this work of benevolence is done at all it should be done in a free and generous way, and the benefits extended to those who are found to be truly deserving without much bargaining or an effort to economize that would be humiliating to the recipient.

Receipts.

Balance in bank, Sept. 30, 1923	$231.67	
Received from Treasurer Oct. 31, 1923	106.25	
Received from Treasurer Nov. 1, 1923	89.25	
Received from Treasurer Feb. 23, 1924	125.16	
Received from Treasurer May 19, 1924	236.91	
		$789.24

Disbursements.

Oct. 5, 1923	$120.00	
Nov. 1, 1923	60.00	
Jan. 4, 1924	180.00	
Apr. 8, 1924	180.00	
		$540.00
June 30, 1924, Balance in bank		$249.24

William T. Sharpless, *Chairman*,
E. B. Heckel, *Treasurer*,
Ira G. Shoemaker,
Walter F. Donaldson.

COMMITTEE ON ARCHIVES

To the President and House of Delegates:

During the past year the Committee on Archives has completed the files of published transactions of our Society in the Secretary's office from 1881 to date.

We thankfully acknowledge receipt of a copy of the History of the Medical Profession of Fayette County, which has been placed in the library of the Committee on Archives. A perusal of its pages, characterized throughout by the highest quality on the part of the writer, as well as the handiwork of the printer, should inspire the leaders of other medical organizations to compile and publish similar histories.

We note at frequent intervals in the various publications of the component county medical societies mention of historical papers that have been prepared and presented before the various societies. We urge all component society officers to bear in mind the existence of proper equipment for the care of such archives, and request that copies of all such historical papers be forwarded for preservation. The younger men in medical practice gain much of their higher inspiration for the fullest development of their calling from the history of medicine.

Walter F. Donaldson, *Chairman*,
Edward Pardoe,
Jacob S. Hackney.

COMMITTEE ON CONSERVATION OF VISION

To the President and House of Delegates:

Among the problems considered by the Committee on Conservation of Vision, the question of minimum physical standards for drivers of motor vehicles seemed to be of greatest importance. The great number of motor accidents reported during the last year calls attention to the fact that some of these accidents may have been due to defective vision, and also to the fact that proper care was not exercised in the granting of licenses to applicants who were physically unfit to drive. Although gross defect in vision is one of the most serious of physical infirmities which should debar one from driving a car, others are equally important.

Your Committee on Conservation of Vision would therefore recommend that the matter be considered by the General Committee on Legislation, and that at least in so far as visual defects are concerned, the recommendations as outlined by the Committee of the American Medical Association on Physical Standards for Drivers of Motor Vehicles be followed.

It may be of interest to the members of the Society to know that there appeared in an optometric journal an announcement that the Philadelphia Guild of Optometrists would request the Board of Education of Philadelphia to permit the examination of the eyes of public school children by members of the Philadelphia Guild of Optometrists.

A joint protest was made by the Committee on Conservation of Vision and the Director of Public Health to the Board of Education against the granting of this request, on the ground that it was inadvisable to permit the examination of the eyes of public school children by any but regularly qualified physicians. It is not likely that the request of the Guild will be granted.

The attention of the Society is also directed to the fact that routine examination of the eyes does not seem to be observed in many private schools in the primary and even in the higher grades. Although many of these institutions may not fall under state supervision, it is urgent that the physicians of the State of Pennsylvania stand for the proper care and welfare, not only of the public school children, but also of all children and young adults of school age.

To this end the Committee on Conservation of Vision would recommend to all physicians of the state, associated in an advisory capacity with private educational institutions of any character, that proper examination of the eyes be made at the time of admission of the pupil into the school, and subsequently at least once each year.

Respectfully submitted,

Luther C. Peter, *Chairman.*
William H. Sears,
George H. Cross,
John B. Corser,
Hunter H. Turner,
Charles S. Rebuck,
Howard M. Ritter.

COMMITTEE TO CONFER WITH MORTICIANS

To The President and The House of Delegates:

At a meeting of the House of Delegates held at the 1923 session of the Society, President Frontz appointed a Committee to Confer with Morticians, to make a survey of the attitude taken by the undertakers in opposing the obtaining of consent for postmortems. The situation is so acute that it was deemed very expedient that this problem be given most careful consideration. Your Committee considered it advisable to extend the field, and a more comprehensive study was planned and executed.

"Broadly speaking, no hospital is larger than its pathological laboratory." Thus E. M. Bluestone introduces an excellent discussion on "The Value of Postmortem Examinations and the Method of Obtaining Them" in *Modern Hospital,* May, 1922. His reference to the laboratory spirit included the idea of its widest application to every phase of medicine. There is a wealth of suggestion in his idea that "every death is a clinical failure which merits investigation by means of an autopsy." The emphasis which is placed upon the part that postmortem examinations play in the completion of a medical study is by no means too great. Medical failure, as represented by death, deserves rigorous investigation. The postmortem examination performed with a view to securing direct information concerning the causes of death should be the final step of hospital service in those institutions where the patient has had the full advantage of hospital care.

Hospital administration has been notoriously weak in the effort to solve the problems of hospital failures in treatment. There is ample evidence to demonstrate that the reason for failure to secure consent for autopsy lies rather in the attitude of the hospital administrators than in the general unwillingness of relatives. The experience of Mount Sinai Hospital in New York indicates that, when there is a definite point of view on the part of the hospital authorities, the entire organization coöperates to secure the consent of relatives in the interests of medical science. Underlying the scientific investigation of the cause of death is a spirit of potential service to the community and a desire to gather facts which may be helpful in obviating a fatal result in the event of a similar manifestation of the disease as presented by other patients. Medical science may not be enriched by every autopsy, though certainties are established and errors in diagnosis are determined. Suggestions for future therapeutic procedures are called forth and there is a closer correlation of the signs and symptoms of diseases among the living with the underlying pathologic processes, which can only be met satisfactorily and accurately determined by a study of the pathologic processes manifested in tissue organization as revealed by autopsy.

It requires no argument to convince physicians that the study of pathology is the basis of rational medicine. Little discussion is necessary to convince laymen that the knowledge obtained from the study of one dead body may be helpful in prolonging the life of another person or may result in the discovery of some principle which may profoundly affect the welfare of thousands.

The responsibility for securing autopsies rests upon hospitals, and their failure to secure them cannot be excused merely on the statement that relatives are opposed to such procedures. A conscientious effort to convince laymen of their true responsibilities involves tact and judgment, gentleness and persuasiveness, firmness and persistency. Above all, however, it requires a sincere belief in the necessity for such work with coöperative efforts on the part of the entire hospital staff to secure the ultimate check upon its own failures. There must be some conception of the pathologic report as a vital record that evidences the completeness of the hospital study of those who fail to respond to therapeutic treatment. The complete history of a hospital fatality is not secured unless the report of the pathologist is included. This only becomes possible when the postmortem examination is regarded as an essential step in the completion of the medical history.

A questionnaire, accompanied by an explanatory letter, was sent out to 250 institutions in the state, including hospitals, sanitoria, etc. Replies were received from only 102 institutions, notwithstanding the fact that a "follow up" letter requesting a reply was duly forwarded. The Committee begs to extend grateful appreciation to the executives of the institutions replying to the same, and is deeply appreciative of the very helpful additional data sent by the several hospitals whose Superintendents and Pathologists sensed the intense value of the survey being made.

The questionnaire asked for the following information:

1. What per cent of autopsies is obtained by your institution?
2. What methods do you find best to secure permission for an autopsy from the following (a) Roman Catholic, (b) Protestant, (c) Hebrew, (d) Negro, and (e) any other?
3. What is the experience of your institution with the objections offered by undertakers in influencing the relatives against giving consent? And what have you found to be the best methods to overcome the untoward effect of the undertaker?

The returned questionnaires afford much food for thought, and are most helpful as an aid from various angles of the problem.

The following is an epitome of the questionnaires returned:

1. What percent of autopsies is obtained by your institution?

The percentage as tabulated is as follows: 1 per cent, 3; 1.5 per cent, 1; 2 per cent, 4; 3 per cent, 1; 4 per cent, 2; 5 per cent, 7; 6 per cent, 1; 7.7 per cent, 1; 10 per cent, 10; 11 per cent, 2; 12 per cent, 1; 13 per cent, 1; 14 per cent, 4; 15 per cent, 2; 16 per cent, 3; 17 per cent, 1; 20 per cent, 6; 23 per cent, 1; 24 per cent, 1; 25 to 30 per cent, 4; 26 per cent, 1; 27 per cent, 1; 35 per cent, 2; 37 per cent, 1; 40 per cent, 2; 50 per cent, 3; 55 per cent, 1; 70 per cent, 1; 75 per cent, 1; 100 per cent, 1 (in this institution there was only one death during the year, and autopsy was secured). In thirty-two institutions no autopsies were done, either because no effort was made to obtain permission, or the institution was not equipped to do postmortem work. It is intensely interesting to note that many of the institutions herewith recorded are on the list of approved hospitals.

2. What methods do you find best to secure permission for autopsy?

It would seem that the main effort should be to secure the confidence of the relatives, and to assure them that they will be advised of the findings. It would be expedient to stress the point that the autopsy is being done so that the relatives themselves may know definitely the cause of death, rather than from the point of view of the medical profession. Pursuant to this thought, the suggestion is made that the autopsy permission slip really should be in the form of a request from the relatives, rather than permission given.

The greatest amount of tact must be observed. Each case is a case unto itself; carefully study the family and govern accordingly the method of approach. When the relatives definitely are found to be opposed, the issue should not be forced; but the relatives should be reassured that the matter is entirely up to them, that no one would desire to examine the body, if it is against their wishes.

It is recommended that the words "autopsy" and "postmortem" not be used; instead, ask for permission to make an examination. Assure the family that the examination will be done as carefully as an operation; that there will be no mutilation of the body; and that it will not affect the appearance of the body when prepared for burial.

Success in securing permission depends largely upon the personality of the individual making the request. At times a third party may be interested in suggesting to the family that an examination be made.

The following reasons used to obtain permission are culled from the questionnaires. General scientific and humanitarian interest; for proper issuing of death certificates; in order to answer properly the questions on insurance papers; further, the collection of insurance often demands a postmortem examination; the examination may reveal conditions that may be helpful in saving lives of others, possibly of the deceased's relatives; when liability insurance is involved, the findings may turn the tide in favor of the estate of the deceased; there may be determined the presence of familial and inherited diseases, and the records of the examination will be available to the family; to afford the family knowledge of the exact cause of death; in certain instances an obligation of the family to hospital for care of patient; the family always should be advised there will be no charge for the examination. The routine procedure of opening the chest, abdomen, and the skull in all cases oftentimes militates against consent. The skull should be opened only when there is distinct indication. Frequently permission may be obtained when the family is assured that only a regional examination will be made; for instance, if an operation has been done on the chest, abdomen or head, that an examination will be made through the incision only; or, in medical cases, if the pathology seems to have been localized in the head, chest or abdomen, that the seat of pathology only will be examined.

In regard to securing permission where race and religion are factors the following is submitted: The question of religion should not be mentioned, unless the relatives directly refer to it or the person interviewing the relatives anticipates the issue from their attitude. An intelligent Catholic will not offer religious objections; those who are not intelligent are very apt to state that the Church does not permit mutilation of the dead. These should be properly advised of their error. The priest very often will be of service.

The Hebrew is the most difficult of all to handle, on account of (1) religious views; (2) the relatives are so hysterical they cannot be approached, or only with the greatest difficulty; and (3) the limited time for burial. Many institutions state it is absolutely impossible to secure an autopsy on a Hebrew. This will prove to be an increasingly serious situation because in many communities the Hebrew constitutes the largest percentage of hospital admissions, hence the greatest percentage of deaths. A request for an opinion on the religious objections offered by Hebrews was sent to Rabbi B. L. Levinthal of Philadelphia, who replied as follows: (It would be well to quote this opinion when Hebrews offer religious objections.)

> "In response to your inquiry as to the circumstances in which a postmortem operation is permissible under the Jewish Rabbinic Law, I desire to state that unquestionably the dissection of a corpse is not prohibited where a reputable physician believes that it is essential for the advancement of medical science. Where a postmortem examination may result in the discovery of the origin or cause of some serious disease, it is my firm conviction that thus to serve humanity is sanctifying, rather than desecrating the dead."

On account of the influx, the Negro, too, is presenting an increasing problem, and many institutions either do not secure permission, or do so only after the greatest difficulty. The failure is due to superstition and ignorance on the part of the relatives; and frequently the body is claimed by a former employer, a lodge or society and the persons so acting do not feel at liberty to give consent.

The so-called "foreign element" may be reached through their spiritual advisers. This applies to all creeds and races. It is of interest to note that many of these people come from countries where autopsies are done as a matter of routine in all institutions; it has been an accepted situation to them, previous to admission to the institution, yet when they come to America they seem to object so bitterly.

Religion and superstition very frequently can be overcome by tact.

In securing permission for an examination, the main issue is that everyone connected with the institution must be keyed to the proper amount of interest. The attending physician, the intern, the nurse, the directress of nurses, the superintendent and others, may each or all, have a direct influence in the respective case. It would seem preferable to secure permission prior to the death.

All institutions should have a blank form to be used when permission is secured. The following is a suggestion, which includes certain details that have been discussed, and others that will be referred to in the remaining portion of this report:

> I .... bearing the relation of ....
> to ...., a deceased patient, do hereby request the authorities of this hospital to perform an examination of the body of said patient, with the object of ascertaining the correct cause of death. The body is to be released to undertaker
> Mr. .... Address ....
> who is authorized to call for the same
> a. m.
> ....p. m. ....192..
> Witness: Signed:
> ....
> ....

The form affords (1) written request; (2) it is secured previous to the advent of the undertaker on the scene, who so frequently interferes; (3) it distinctly states what undertaker is to take charge of the remains, thus avoiding embarrassing confusions. If a change is made in the undertaker, a notation should be made of the change, and if available the person signing the request should sign the notation; (4) the undertaker always should be notified immediately after the death, when he is to call for the body. His time is valuable to him, and he should not be required to make unnecessary trips to the institution, nor be required to wait around indefinitely until the examination is completed; (5) further, the name of the attaché of the hospital phoning the call to the undertaker should be signed to the request form to fix responsibility, for reasons to be discussed more fully in another part of this report.

The following form is used by one of the institutions in the state, not a general hospital:

> We have sent you notice of the serious illness of .... whose death is likely to follow at an early date. Word will be sent to you immediately if it should occur, and your instructions concerning the remains will be followed.
>
> We have been especially interested in the medical features of Mr. ....'s case, and in the event of death we are very anxious to hold an examination for the purpose of perfecting our medical knowledge of the case. It is only by such an examination that all the facts can be obtained. The hospital employs a skilled pathologist for the sole purpose of conducting such work for the advancement of medical knowledge. The examinations are made in such a manner as to leave no visible marks. Many friends like to have the satisfaction of knowing the exact cause of death and we are always glad to give this information upon request. In addition this exact knowledge is often valuable in settling life insurance claims. In view of the probable outcome of h... illness, I am writing to ask if you will, after consideration of the above statement, kindly give your consent to a postmortem examination. Enclosing an envelope for your reply, I am
>
> Very truly yours,
>
> Superintendent.

In this form it would be preferable to omit "postmortem" in the closing portion and insert "consent to an examination being made."

The attending physician always should attempt to obtain permission for the postmortem; when a "private patient" is involved, the attending physician surely should be the first to approach the relatives. The chief resident or the intern may be more effectual. In many instances the permission is not obtained previous to death, in fact no reference to an autopsy has been made previous to death. Under these circumstances the problem of securing the permission rests entirely with the intern, with or without the aid of the chief or chief resident. Too frequently the intern is responsible for the failure to obtain permission. Undoubtedly, most of the deaths occur at night, in the wee small hours of the morning, at a time when the intern dislikes to get out of bed. When called, he administers restoratives to the dying patient, and when death occurs, as a rule, he attends as quickly as possible to making the required entries on the history chart, and hastens to bed. Frequently the relatives arrive late, the intern is already in bed, his moral obligations having been fulfilled, and he has no more interest in the matter. Unfortunately, there are too many instances where the intern asks for permission, hoping that it will not be obtained, as he will be required to do the autopsy. It is unnecessary to say that under such circumstances permission is not secured. An active, wide awake intern, imbued with the proper interest, who is serving well the institution, and who is anxious to see the end results of his labor, should be allowed to use the telephone, telegraph, or even go to the home of the family, if necessary, to secure permission.

The percentage of postmortems can be increased if the interns are properly instructed not only how to proceed to secure permission, but also the value of the postmortems to the interns and the institution. The intern should be made to realize that the postmortem rate is somewhat an evidence of his interest in medicine, and influences his rating so far as intern efficiency is concerned. In order to foster the spirit of competition in securing postmortems, some institutions post on the bulletin board each month a list containing a tabulated report of the names of the chiefs, the number of deaths on their services for the preceding month, the number of autopsies secured, and percentage. A similar list is posted, giving the same data for each intern. In this manner it is definitely shown each month which chiefs and interns are not making good on securing postmortems. The list may show further: (1) the total number of deaths for the preceding month; (2) total number of deaths for the month before the preceding month; (3) the percentage of autopsies for each of these two months; (4) the increase or decrease in the percentage for the preceding month, and (5) a record of those securing permission which was afterward recalled.

The chiefs may be advised by the superintendent or the chief resident each month of their postmortem rating on a blank form, as follows:

> Name of Hospital
>
> Dear Dr. ....
>
> During the month of .... there were .... deaths on your service. Of this number .... bodies were posted.
>
> Your average for this period, therefore, was

.... per cent. The general hospital average for the month was .... per cent.

Very truly,

Superintendent
or
Chief Resident.

This will afford the chief a definite statement each month of the postmortem situation on his service, and will serve to stir him to increased activity and further to interest his intern. This data also may be read at the stated meetings of the hospital staff.

One hospital reported that it paid the interns three dollars for each postmortem permission secured.

The last question in the questionnaire is, "What is the experience of your institution with the objections offered by undertakers, in influencing the relatives against giving consent? and what have you found to be the best methods to overcome or counteract the untoward effect of the undertaker?"

The Chairman of your Committee, appreciating the difficulties arising from the objections offered by the undertakers to postmortems, informally discussed the matter in 1920 before the Board of Trustees of our State Society. In 1921, arrangements were made for a medical speaker to address the annual session of the Funeral Directors Association of the State of Pennsylvania then held at Scranton. No coöperation was secured. With the organized effort made this year it was deemed expedient that the Funeral Directors Association must be interested, and every means used to secure its coöperation. Accordingly a conference was held in Harrisburg, in April, with Mr. Ramsay Burton (of Erie) who was then the President of the State Funeral Directors Association. Mr. Burton appreciated the situation to its fullest extent, and has shown wonderful vision. He realizes the solution of the problem is of equal importance to the undertaker and the physician, and entered into the activity with the greatest amount of enthusiasm. As stated by him, "The situation is acute, and both the physician and the undertaker must be properly instructed." Formal plans of procedure were adopted at this conference, and our State Society is most gratefully indebted to Mr. Burton for carrying our cause to every undertaker in the state.

The Funeral Directors Association of the State of Pennsylvania consists of fifteen component associations. These local associations held their annual meetings in May, which were attended by the officers of their State Association. Arrangements were completed whereby each one of these local associations would be addressed by a medical speaker. In order to secure the latter the President of the respective county medical society, where the funeral directors local association held its meeting, was requested to appoint the medical speaker for the occasion. Four of the fifteen speakers failed to keep the appointment much to the chagrin of your Committee. The Committee desires to express grateful appreciation to those who did respond, and for the reports they submitted. In arranging for the medical speakers a form letter was sent to the president of the respective county medical societies, containing full instructions, and certain details, with the request that the letter sent to the president be given to the speaker, and the name and address of the latter sent to the Committee. When the name of the speaker was received a follow-up letter was sent to him, with further material for his address, and a request that a report of the meeting be sent to the Committee, in order that all points at issue raised by the undertakers in discussion could be assembled for the final address, to be made by a medical speaker at the annual session of the Funeral Directors Association of the State, held in June. Mr. Burton was more than pleased with the results obtained at the meetings of the local associations. When the medical speaker failed to appear, Mr. Burton very kindly called the attention of the local association to the postmortem situation, and how the undertakers could assist in having the family give permission for autopsy. Each local association appointed a committee to confer with the medical profession of the community on the various phases of the postmortem problem.

The replies to the questionnaires show that the greatest difficulties are being experienced with the undertakers in Philadelphia, Pittsburgh, Easton, Erie, Allentown, Reading, Scranton, Harrisburg, Kingston, Chester, Eagleville, Hazleton and Altoona. The undertakers may be classified as coöperating, helpful, lukewarm or absolutely rebellious.

At this juncture it would be well to state that the medical profession is equally guilty with the undertakers of the situation as it exists. It is absolutely foolish for the physician to take a "holier than thou" attitude. Too frequently the physician has shown a total disregard for the undertaker in every respect. We must put our house in order and come with clean hands if the coöperation of the undertaker is to be secured.

The undertaker is resentful towards the medical profession, and justly so, for a total disregard of his interests in the past. The reasons for and the correction of the same may be summarized as follows:

(1) In many institutions there is a system of graft, from the superintendent's office down, by which a certain undertaker is favored. The undertakers desire that this system be abolished. They are willing to do their part by dropping from membership in their associations undertakers who are following this pernicious practice, and in return request that the institutions discharge employees who are guilty of this offense. Certain institutions, as a matter of routine, are in the habit of referring all families to one specified undertaker, the question of graft not being at all involved. The undertakers request that this procedure be discontinued. In the smaller communities a list of reputable qualified undertakers could be used, and the undertakers recommended in turn. When the undertaker knows that his interests are being served by an institution, he will coöperate in every way with the authorities of that institution.

(2) When the undertaker receives notice to call for a body, he does so immediately, as a matter of self-protection. Numerous incidents may be cited where a change has been made in the undertaker, due to interference on the part of institution employees, the undertaker first engaged losing out. Therefore, when the call is received he hastens to the institution to remove the body, because once it is in his possession, the possibility of a change being made is remote. The undertakers recommend that a record be kept by the institution of the name of the person telephoning to the undertaker to call for the body, in order to fix the responsibility for making the call.

(3) The body too often is not given proper attention after death. The duties of an undertaker are more numerous than any physician can realize. One of his functions in assuming charge of a body is to embalm it properly, and have that body make the best possible appearance on the day of the funeral. Therefore, it is to his interest that the proper care and attention be given a body from the time death occurs until it is

delivered to him. This care should be observed not only in institutional work, but also in the home. Needless to say this is a responsibility that rests upon the medical profession to see that everyone in caring for the body is properly instructed. Discontinue tying up the lower jaw, because at times a mark is made on the face that cannot be obliterated by embalming. Instead use a roller bandage of sufficient length, or other support, one end of which rests on the upper part of the sternum, the other end under the chin. The end of the support under the chin should be padded in order not to bruise the tissues. The arms should be folded across the body and tied. The head and shoulders should be elevated sufficiently to allow drainage of the blood from the head and neck. Institutions should be provided with proper refrigerating equipment in order that the body may be cared for until delivered to the undertaker. In warm weather, and when the death occurs at night, and the body is being held until the next day for the autopsy, the preservation of the body is very important. An undertaker cannot be expected to embalm a partially decomposed body, and have it presentable for a public funeral.

(4) Death certificates should be issued immediately, in order that when the undertaker calls at the institution for the body the certificate will be ready, and he will not be kept waiting. When the death occurs at home, the certificate should be issued promptly in order that when the undertaker calls at the physician's office for it he will not be kept waiting, or will not be required to make unnecessary trips. One undertaker reports having made five visits in one day to a physician's office before securing the certificate.

The Chairman of your Committee was the medical speaker at the annual session of the Funeral Directors Association of the State of Pennsylvania held at Harrisburg in June, and was most cordially received. The postmortem problem was discussed from every angle and the association was advised of the definite recommendations that would be made by this Committee to the Medical Society of the State of Pennsylvania. The Association adopted a resolution that the address delivered by the Chairman of your Committee be published, and a copy sent to all the undertakers in the state; further, a committee of three was appointed to confer with our State Society. The retiring President of their Association, Mr. Ramsay Burton, was appointed Chairman of their Committee, thus assuring continued interest and activity.

The undertaker too frequently urges the family not to give permission, or, if permission has been given, to withdraw it. His reasons for doing so are that: it is impossible properly to embalm a body that has had a postmortem done; it increases the cost of his services; the body will not be turned over to him in "decent condition"; and, it will not be possible to make the remains presentable. If the proper technic is observed in making the postmortem, no difficulty should be experienced in embalming. The medical profession is to blame in many instances for carelessness in technic, and we must correct our indifference if we are to secure the coöperation of the undertaker. If a proper technic is followed, there should be no excuse for the undertaker objecting to an autopsy or making an additional charge for his services. The better class of undertakers will not do so. When a family finds that the undertaker has charged ten to twenty-five dollars extra on account of the postmortem, it will have its baneful influence. This is a factor which we must overcome, and when knowledge is had of this, the superintendent should discuss the matter with the undertaker. Undertakers who do not coöperate with the institutions and with the physician in his practice cannot expect courtesies in return.

The following points to be observed in performing autopsies have been adopted by the Philadelphia Hospital Association and the Embalmers Association of Pennsylvania, and therefore are recommended as a standard technic to be observed in the making of all autopsies in this Commonwealth:

> 1. Routine incision should consist of a midline incision extending from below the suprasternal notch to the symphysis pubis, except where there are special indications for other procedures, in which case every precaution should be taken to prevent disfigurement.
>
> 2. The aorta should be examined in situ, if possible, but if removed, the left carotid and innominate arteries should be ligated, leaving eight inches of ligature attached. In general, the circulatory system should be kept as near intact as possible. To do this it is absolutely essential to ligate all vessels before removing any of the viscera of chest or abdomen.
>
> 3. The rectum should be ligated below the point of incision.
>
> 4. In removing the brain, the scalp incision should extend from ear to ear over the vertex. After removal of the skull cap and the brain, leakage from the carotid arteries should be prevented by plugging, putty, plaster of Paris, or other means. When plaster of Paris is used, especial care should be observed to permit it to dry before closing the skull.
>
> 5. The head and shoulders should be kept raised during the examination in order to allow the blood to drain away.
>
> *Note:* The head and shoulders should be kept raised at all times after death, both in the wards and mortuary.
>
> 6. After the completion of the examination, blood and other stains should be completely removed, and incision tightly and neatly closed.

The postmortem room should be inviting, well lighted and ventilated; the floors should be kept clean; and the morale during the performing of an autopsy should be of the highest. All postmortems should be done by one properly trained, or under proper supervision. The incision should not extend too high on the sternum. It must be borne in mind that the body must be presentable at the time of the funeral. In women a high incision prevents the wearing of a low neck dress, or the customary low neck shroud. Be very careful to close the incision properly so as to prevent leakage. If it is necessary to mutilate any part of the body visible to those who attend the funeral, special permission to do so should be obtained from the person giving permission for the autopsy. The body should be properly cleansed upon the completion of the autopsy. Many undertakers complain that after a postmortem, bodies are turned over to them soiled with blood and the body secretions and excretions. In some of our institutions the postmortem examinations are being done in such a careless and unscientific manner, that when the body is turned over to the undertaker, a verbal attack is invited. When it is necessary to turn the body face down, for example, in opening the spinal canal, place a pillow under the face to avoid bruising the nose.

In some communities the objection on the part of the undertaker to an autopsy is overcome by having the autopsy done at his establishment. In other words, he must obtain immediate possession of the body in order "not to lose the job." This applies more especially to the so-called little undertakers.

The undertaker always should be advised when a postmortem is to be done and notified when to call for the body. His time is as important to him as our time is to us, and there is no reason why he should be required to wait indefinitely for a body, through the indifference and disregard on the part of the administrative officers of an institution. The undertaker may be invited to be present at the postmortem. Having seen the technic used may facilitate his work in embalming. If a body is to be shipped from the community and it will expedite the work of the undertaker, he should be permitted to embalm the body in the postmortem room. Again, it may be considered advisable to permit the undertaker, in cases where extensive removal of viscera has been done, to embalm the body before the incision is closed.

The undertaker prefers that the autopsy be done immediately, in order that the body may be embalmed as soon after death as possible. Their Association was advised that this is not always possible for the following reasons: In hospitals connected with medical schools the autopsy is assigned for an hour when the medical students can be assembled to see it done; and as the greater number of deaths occur at night, it is preferable to hold the body until the next day, when the pathologist is on duty, and proper technic will be assured. If proper care and attention is given the body, as outlined in another portion of this report, this objection will be obviated.

We are indebted to Dr. John A. Kolmer who has been actively experimenting during the past year along the lines of an acceptable embalming fluid, the thought being to devise for the undertaker an embalming fluid which could be injected by the embalmer, to be followed by the autopsy, thereby removing the objection to the autopsy raised by some undertakers. Such a fluid, however, must not produce any gross or histological changes in the tissues in order to be acceptable from this standpoint. He has discovered that the fluids in ordinary use contain so much formaldehyde that they are useless for this purpose, but numerous experiments have shown that the preserving fluid devised by Dr. Addinell Hewson, Secretary of the State Anatomical Board, is admirably suited. It yields perfect preservation of the tissues when injected in the usual manner and in the usual amounts, although experience has shown that the percentage of formalin is too low to set the muscles of the face, and accordingly the jaw may sag before burial takes place. It is possible, however, to inject the head with the usual embalming fluid and the balance of the body with Dr. Hewson's fluid. By a method of this kind, Dr. Kolmer has determined that the pathologist may make a thorough macroscopic and microscopic examination of the tissues after the embalming has taken place, without any changes having been produced in the tissues. The experiments are very interesting, and possibly may prove of practical value in overcoming the objections raised by some undertakers to autopsies.

Dr. Kolmer will publish an account of this experimental work, and we are appreciative of the opportunity of being permitted to make this preliminary report. This experimental work was called to the attention of the Funeral Directors Association at its annual session in June, and the Association requested Dr. Kolmer to communicate with the Chairman of the Committee for Research Work of the National Selected Morticians. Dr. Kolmer very kindly did so, and an arrangement will be made for a conference in Philadelphia, at which time Dr. Kolmer will be very glad to lay before them the results of his work.

The Committee submits the following conclusions and recommendations: (1) The medical profession must realize that it is responsible in a large measure for much of the antagonism to autopsies on the part of the undertaker, due to the careless manner in which postmortems are held in most institutions. The average undertaker is a very unlearned, ignorant man, in a business distasteful to most people—a negative business, hence it is impossible to reason with him. The unfortunate thing is that most of our undertakers are recruited from this type, and many of them are men who have been unable to find their vocation in life. He is now emerging. The State Board of Undertakers is trying to license higher-grade men than in the past. A higher standard of requirements is being exacted. Their State Association is frowning on the dishonest members, and are seeking for better education, and the giving of greater service at less cost to the public. Their contact with the doctor is very close, and we should do our part to instruct and coöperate with them.

(2) That the general information imparted in this report be used to advantage by the institutions and the individual physicians, in correcting existing conditions.

(3) The necessity for educating the public, the medical profession and the undertakers to the value of and the benefits derived from postmortems. This survey shows that the scientific zeal of any institution very largely may be judged by its low mortality rate and its high postmortem rate; that the medical executive's department and the medical staff are directly to blame for a low postmortem percentage; that there are no obstacles that cannot be removed, in so far as religion, race and the undertaker are concerned.

(4) The postmortem percentage can be increased in any institution if the interns are properly instructed not only on how to secure permission, but in addition, on the value of the autopsies to the interns themselves and to the institution.

(5) The visiting staff, intern staff, the superintendent, and the nursing staff must be wide awake, interested, and enthusiastic in obtaining autopsies. The interest, however, must not be carried to a degree beyond which more harm than good may be done. The greatest tact must be employed.

(6) The treatment and courtesies extended to patients and their relatives and visitors, often makes the way very easy to obtain permission for an autopsy. The members of the visiting staff and the interns, by showing a personal interest in the patient, conversing with patient's relatives and friends, answering their inquiries, makes it much more difficult for the family to refuse permission.

(7) The clergy, including Protestants, the priests and the rabbis, should be invited to attend one of the staff meetings of the community institution, and their attention called to the necessity of postmortems, thereby winning their coöperation. The undertakers should be included.

(8) An institution is more likely to show interest in an undertaker who coöperates than one who is antagonistic. The undertaker, from a selfish standpoint if no other, should bear this in mind. Undertakers of

good repute, and who are well known and competent, offer no objections. The smaller establishment which has but mediocre ability, is the one most apt to influence the family. The Negro and Jewish undertakers are the most difficult to handle.

(9) The result of the district meetings, when the local associations of undertakers were addressed by a medical speaker, proved to be most beneficial, showing a spirit of coöperation and a keen desire on the part of the undertaker to help and to be helped. This reached its climax when the medical speaker addressed the annual session of the Funeral Directors Association of the State of Pennsylvania.

(10) The report herewith submitted should be printed by our State Society in order that a copy may be sent to each of the institutions in the state. In this way the recommendations made for the securing of permission for an autopsy, the care of the body (whether a postmortem is done or not), the care of the body after autopsy, the technic for making an autopsy, etc., may be placed in the hands of the administrative officers of the institutions, whereby the errors now being committed may be corrected.

(11) Your Committee to Confer With Morticians should be continued that the work done may be followed and coöperation assured.

Respectfully submitted,
V. L. Andrews,
David W. Thomas,
Frank C. Hammond, *Chairman.*

COMMISSION ON COMPENSATION LAW

REPORT OF THE COMMISSION APPOINTED AT THE 1923 SESSION OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA TO STUDY OUR PRESENT COMPENSATION LAW AND MAKE SUGGESTIONS FOR ITS CHANGE THAT WOULD BENEFIT THE INJURED MAN AND ADEQUATELY COMPENSATE THE PHYSICIAN

To the President and House of Delegates:

It is recommended that amendments to the present Compensation Law be made to accomplish the following points:

1. Give the hospitals a definite standing at law.
2. Give the physician a definite standing at law.
3. Adequately compensate the physician and the hospital regardless of the time at which death might take place and regardless of money paid to undertakers for funeral and burial expenses.
4. Payment of physicians for service rendered to compensation cases regardless of where the service is performed and regardless of whether individual hospitals rule that their staff physicians shall or shall not make charges for service to compensation cases during the time the law provides for such compensation. Limit to $100.00 each.
5. At the end of the thirty-day period the compensation case shall be a no-pay, charity or indigent case if methods of investigation provided by the State Welfare Board prove such a case to be the proper case for charity. This to apply unless other provision for the case has been made.
6. Create three medical boards consisting of three physicians, each to be selected by the Governor from physicians representing capital, labor and the organized medical profession in Pennsylvania. Each of these to be charged with the duty of making decision as to whether reasonable opportunity of improving the condition of the injured man after the thirty-day limit has expired, by further hospital and medical attention, such medical boards to function when dispute has arisen between the injured man and the employer as to the responsibility for such service. Serious and unusual fractures, extensive and unusual injuries to soft parts, and injuries of some duration demanding surgical rehabilitation are the types of cases this provision is designed to cover, the cost of such additional service not to exceed $100.00 for the physician and $100.00 for the hospital. (Compensation for these medical boards to be provided for on the same basis as the State Board of Medical Education and Licensure—$15.00 per day and expenses.)
7. Resident internes serving in hospitals to be denied the right to collect fees for service rendered injured employees under this act. Hospitals to be permitted to make their customary charge for out patients' dressings even if performed by internes or resident physicians.
8. Any medical doctor, surgeon, hospital or institution treating an injured employee coming under the Workmen's Compensation Act, to be made one week after the beginning of such treatment, to furnish to the employer or his insurance carrier a certificate that such medical, surgical or hospital service is being rendered. All bills for service rendered injured men coming under the meaning of this act to be forwarded to employer or insurance carrier within thirty days of the termination of period for which physicians or hospitals can legally make charge. Failure to comply with this rule concerning the sending of bills automatically cancels such. However, it must be shown that they were not sent.
9. Wherever the conditions are such that the employer is unable to furnish medical and surgical services, medicines and supplies, hospital or institutional care, medicine and supplies, and the treatment and care and supplies be furnished in an emergency, wherein the absence of the employer or the condition of the employee makes it impossible for such employer to provide such service, medicine and supplies or for the employee to procure them for himself, said service, care, medicines and supplies shall be paid for by the employer to the medical doctor or surgeon for such medical treatment and supplies and to the hospital or other institution for such care and supplies, at the usual rate in the community for such emergency service.
10. Insurance carriers to have the right to select their own physicians and surgeons.
11. Hospitals and doctors to render separate bills and to be considered absolutely separately in the making of these provisions. $100.00 limits each.
12. Where death has occurred and there is a question as to whether it resulted from injury or natural causes, the responsibility shall be decided by postmortem examination.
13. Any information given by physicians from the professional knowledge of cases shall be given with the protection of the tribunal before which the testimony is given. In other words, if the physician should in testimony divulge privileged information, this would be done on the responsibility of the administration of the law.

It is recommended that a separate law be enacted providing money to establish and maintain a university of reëducation, which will provide for the reëducating of men who, after receiving every possible surgical reconstructive care, are not fitted to resume their former occupation or other sufficiently gainful occupation. Such a university to have extension units or schools in various industrial centers of the state in sufficient numbers to meet the convenience of injured men in getting to these schools from their homes.

Our commission approached this problem with an open mind. With no preconceived ideas concerning changes, the commission sought suggestions, criticisms and recommendations from each county medical society in the state. In addition, suggestions from individual physicians were sought, received and considered. An effort was made to get the viewpoint of all organizations, directly or indirectly concerned with the operation of the Compensation Law. It was felt that the injured man's point of view was probably, in fact perfectly understood by the physicians and that no necessity existed for an elaborate discussion with him on these points. However, it was felt that it was most essential to have a proper understanding by and the sympathy of the insurance carriers, and with this idea in view, conferences were held with representatives of the stock insurance companies, the State Chamber of Commerce, the Pennsylvania Railroad and the Self-Insurers' League of Pennsylvania. In addition, conferences were held with representatives of the Pittsburgh, Philadelphia and State Hospital Associations. Our recommendations are based on this research. One meeting was held with the Medical Legislative Conference at which all these recommendations were discussed. At this meeting the commission was shown the utmost courtesy and a sincere desire to coöperate on the part of the Medical Legislative Conference. A committee from the commission also presented our thoughts to Mr. Walnut, Chairman of the State Compensation Board, and to Dr. Ellen Potter, Secretary of the Department of Public Welfare.

The commission encountered open antagonism to its aims in only one quarter. The Self-Insurers' League. at the time of our second and last conference, although previously professing interest in and sympathy for our aims, finally frankly admitted that we would find them in opposition to anything in the nature of a proposal for change in the Compensation Law, regardless of its merits. In all other quarters the commission encountered the finest coöperation and perfect sympathy with its aims. This must not be construed as including the Chairman of the Compensation Board or the Secretary of the Welfare Department, who, of course, were able simply to receive our suggestions, no doubt with the thought of having them before them as the recommendations of the medical profession of the state when these Departments may take up proposals or recommendations for new legislation, preparatory to the convening of the next session of our Legislature.

The Self-Insurers' League of the state represents powerful interests with a powerful lobby. If any amendments looking toward the improving of the operation of our present Compensation Law are to be enacted at the next session of our Legislature, they will be made possible only by the support of the individual legislators, secured by the physicians of their legislative districts, prior to their going to Harrisburg. This support can be secured only by thoroughly acquainting members of the legislative session of 1925 with the merits of the proposed changes. If an effort is made in each district properly to explain the aims of these recommendations, it would seem certain that the legislator or senator would be in sympathy with their enactment.

The first five recommendations are designed to cover the physician's standing at law. Number six is designed to provide the benefits of reconstructive surgery to the injured man. The form in which this is presented and the vehicle by which it will operate, the commission is certain can be improved by further study. Seven, eight and nine cover recommendations previously made, and the form of these has not been changed. These recommendations clarify the position of the doctor in relation to the law and require certain performance on his part. Number ten is already covered in the practical application of the law to-day. It represents a concession demanded by those paying out compensation money. Number eleven is simply designed further to clarify what has already been covered. Twelve and thirteen are designed to aid in bringing out the truth. The last recommendation is brought forward on account of a sense of obligation felt by physicians generally to point the way to discharging humane obligations of industry in what to-day is looked upon as a waste product rather than a by-product.

In its research the commission has encountered a small number of isolated instances where the physician has obviously been unfair and dishonest in the making of charges and rendering of bills coming under the Compensation Law. The percentage of instances where this has occurred is smaller than one encounters among other classes or professions. Attention is called to it in order that the medical profession may recognize it and move to eliminate these isolated occurrences, which, aside from their moral aspect, serve to discredit the entire medical profession. We believe that the Medical Society of the State of Pennsylvania might offer, through the proper officers of its component county societies, to act in arbitration in disputes over charges for services rendered.

It has been recommended in certain quarters that a test case be made in such a way as to get an opinion by our highest courts concerning the legality of the Mackey decision refusing to recognize charges made by hospital staff physicians where cases have been sent to the hospital primarily. The commission has taken up this question with the Board of Trustees of the Medical Society of the State of Pennsylvania. The suggestion was made primarily to relieve a situation that otherwise could not be corrected before legislation might be passed at the 1925 session.

Lever F. Stewart, *Chairman.*
Moses Behrend,
H. B. Gibby,
J. T. MacDonald,
M. A. Slocum.

COMMISSION ON CANCER

To the President and House of Delegates:

The excellent public education work carried on by the American Society for the Control of Cancer has seemed to your Commission adequately to cover this phase of our work. The American Society is putting before the people all that seems advisable. Your Commission, therefore, has considered it best to do nothing further in education except to coöperate both as a Commission and as individuals with the American Society's "Cancer Week."

In 1910-1911, your Commission made a survey of the cancer situation in Pennsylvania, with a view especially to showing the extent of delay that cancer cases went through before seeking adequate treatment. The report of this study was published in the *Pennsylvania Medical Journal* in April, 1912. Since this time a considerable amount of time, labor and money has been spent in public education by the American Society, your Commission, and many other agencies.

In 1922 your Commission decided that it would be worth while to make a similar survey during the year 1923, approximately thirteen years later, to learn if possible, first: Does cancer education pay?—and also to learn how previous efforts could be improved upon.

Accordingly, in 1923, a survey was made as far as

TABLE NO. I

Reprinted from the *Pennsylvania Medical Journal* for April, 1912.

From the Report of the Cancer Commission of the Medical Society of the State of Pennsylvania.

Table showing data in cases of superficial cancer at time of applying for operation.

Class.	Site.	Total number.	Average age.	Per cent operable.	Per cent showing precancerous chronic irritation.	Average time lost after first cancer symptoms.	Average time lost between first consulting physician and operation.
1	Face	37	58	69	16	3 yrs.	2 yrs. 4 mos.
2	Lip	12	64	100	58	1 yr. 9 mo.	1 yr.
3	Tongue	9	55	2.2	1.1	8 mos.	
4	Mouth	9	63	5.5	33	1 yr. 8 mos.	
5	Jaw	8	58	62	25	10 mos.	8 mos.
6	Antrum of Highmore	2	41	..	100	3½ mos.	
7	Neck	3	58	33	..	2 yrs. 5 mos.	2 yrs.
8	Skin	7	50	85	25	3 yrs. 3 mos.	2 yrs. 6 mos.
9	Arm and hand	5	50	80	75	2 yrs. 9 mos.	
10	Breast	102	50	85	25	1 yr. 6 mos.	9 mos.
11	Axilla	3	43	100	33	1 yr. 2 mos.	9 mos.
12	Parotid	1	47	100	..	1 yr.	
13	Toe and foot	3	49	66	33	1 yr.	1 mo.
14	Penis	6	57	66	33	1 yr. 3 mos.	1 yr.
15	Testicle	2	38	100	50	7 mos.	3 mos .
16	Inguinal lymph nodes	1	38	..	..	1 yr.	
	Averages	..	..	68	39	1 yr. 6 mos.	1 yr. 1 mo.

From the Report of the Cancer Commission of the Medical Society of the State of Pennsylvania.

Table showing data in cases of deep-seated cancers at time of applying for operation.

Class.	Site.	Total number.	Average age.	Per cent operable.	Per cent showing precancerous chronic irritation.	Average time lost after first cancer symptoms.	Average time lost between first consulting physician and operation.
17	Shoulder	1	65	..	..		
18	Stomach	35	52	22	39	1 yr. 5 mos. (9% no exam.)	1 yr. 4 mo. (20% maladvice)
19	Gall-bladder	1	54	..	100	3 mos.	
20	Rectum	14	51	50	50	1 yr. 1 mo.	10 mos.
21	Liver	6	53	..	..	1 yr. 2 mos.	3 mos.
22	Pancreas	4	53	..	..	1 yr. 8 mos.	1 yr. 8 mos.
23	Kidney	2	43	50	..		
24	Pleura	1	47	..	..	1 yr. 6 mos.	1 yr. 6 mos.
25	Intestines	9	44	27	..	1 yr. 4 mos.	1 yr. 1 mo.
26	Omentum	2	52	..	..	5 mos.	4 mos.
27	Neck of uterus	82	50	35	58	1 yr. (10% no exam.)	8 mos. (20% maladvice)
28	Body of uterus	12	46	75	33	1 yr. 7 mo. (10% no exam.)	5 mos. (10% maladvice)
29	Ovary	7	52	29	..	6 mos. (14% no exam.)	6 mos. (14% maladvice)
30	Vagina	4	51	75	..	4 mos.	2 mos.
31	Femur	3	37	66	..	2 yrs. 7 mos.	1 yr. 9 mos.
32	Bladder	5	56	..	..	1 yr. 4 mos.	5 mos.
	Averages	..	..	48	46	1 yr. 2 mos.	1 yr.

TABLE NO. II—1923.

Showing data in cases of superficial cancer at time of applying for operation.

Class.	Site.	Total number.	Average age.	Per cent operable.	Per cent showing precancerous chronic irritation.	Average time lost after first cancer symptoms.	Average time lost between first consulting physician and operation.
1	Face	46	62	35	53	32 mos.	5 mos.
2	Lip	36	60	66	25	24 mos.	9 mos.
3	Tongue	19	60	24	50	17 mos.	1 mo.
4	Mouth	27	58	30	41	10 mos.	4 mos.
5	Jaw	21	56	26	62	7 mos.	3 mos.
6	Neck	4	59	50	..	8.5 mos	5 mos.
7	Skin	16	51	77	50	15 mos.	2.5 mos.
8	Arm and hand	9	59	37	25	26 mos.	11 mos.
9	Breast	227	50	77	18	12 mos.	3.3 mos.
10	Parotid	4	49	25	25	4 mos.	1 mo.
11	Penis	5	63	100	100	12 mos.	10 mos.
12	Testicle	3	38	100	66	21 mos.	1 mo.
13	Bladder and prostate	63	63	30	20	10 mos.	7.2 mos
14	Miscellaneous	12	56	50	50	11 mos.	3 mos.
	Averages	..	..	53	43	14.6 mos.	4.5 mos.

Showing data in cases of deep cancer at time of applying for operation.

Class.	Site.	Total number.	Average age.	Per cent operable.	Per cent showing precancerous chronic irritation.	Average time lost after first cancer symotoms.	Average time lost between first consulting physician and operation.
15	Stomach	116	54	13	25	8 mos.	4 mos.
16	Gall-bladder	23	59	10	80	8 mos.	3.3 mos.
17	Rectum	95	55	40	27	8.6 mos.	3.2 mos.
18	Liver	18	55	6	22	6.6 mos.	3.5 mos.
19	Pancreas	22	53	..	40	4 mos.	2.4 mos.
20	Intestines	53	58	31	29	10.8 mos.	3.6 mos.
21	Neck of uterus	268	48	21	47	7.6 mos.	1.7 mos.
22	Body of uterus	45	54	50	22	10 mos.	3 mos.
23	Ovaries	20	48	40	40	5 mos.	2 mos.
24	Vagina	27	57	52	24	7.4 mos.	1.1 mo.
25	Bladder and prostate	53	..	..	..		
26	Esophagus	27	57	..	11	7.4 mos.	4.0 mos.
27	Larynx	19	55	31	40	16.0 mos.	5.7 mos.
	Miscellaneous	34	43	32	28	15 mos.	13 mos.
	Averages	..	..	25	33	8 mos.	3.9 mos.

possible on exactly the same lines as in 1910. Just the same form of questionnaire was used. The tabulations were made by the same man and everything was done to make the two surveys the same.

For comparison we reprint below the tabulation of results for 1910-1911, and we also show the same tabulation for 1923. The anatomical divisions have been changed slightly, as in some classes the cases reported were not large enough for a separate classification. In 1923, a new large class for the esophagus and larynx was made possible by the interest of Chevalier Jackson.

A study of these two tables will give a very definite affirmative answer to our most important question: cancer education does pay. Reduction in the delay is shown in practically every anatomical type of cancer in 1923 over 1910. To appreciate this in detail the two tables must be carefully studied. The average figures may well be emphasized at this point in Table III.

TABLE III.

	1910.	1923.
Superficial Cancers:		
1. Average time between first symptoms and operation..	18 months.	14.6 months.
2. Average time between first consulting physician and operation	13 months.	4.5 months.
Deep Cancers:		
1. Average time between first symptoms and operation..	14 months.	8 months.
2. Average time between first consulting physician and operation	12 months.	3.9 months.

The items in Table III show how much of the delay is due to the patient and how much delay there was after a doctor was finally consulted. For the sake of brevity these items will be spoken of as, first, Patient's Delay; and second, Doctor's Delay.

THE PATIENT'S DELAY

The improvement in the patient's delay, while very real, still leaves an all too long time between the attention being called to the first symptom and application for efficient treatment; so that all proper and available methods of educating the public must be continued and amplified and extended so far as possible. Indeed, we should feel much encouraged and stimulated to greater efforts because this report shows that education of the public is producing results. It is easier to fight a winning fight than a losing one, and this demonstration that public education in cancer is beginning to produce actual results is perhaps the most useful thing that your Commission has done since it was formed in 1909.

THE DOCTOR'S DELAY

A glance at Table III will show that the doctor's delay, or the time that elapses after a physician is first consulted and radical treatment begun, has diminished at a much more rapid rate than the patient's delay.

In 1910 the attitude of the general medical profession to cancer gave opportunity for considerable criticism. A perusal of the 1249 individual case reports in 1923 will show that the vast majority of the medical profession is now serving the community exceedingly well in regard to the institution of early medical treatment for cancer. There still remains, however, a small minority of about 10% whose attitude is far from the most desirable. This can perhaps be best illustrated by analyzing the reports for breast and uterine cervix cancers, as these are the largest and most representative classes.

BREAST CANCERS

In 1910, the physician first consulted for breast cancer did not make a local examination in 3% of the cases. In 1923, in the 227 breast cases, failure to make an examination at the first visit was not noted once. However, 10% of the doctors first consulted are chargeable with 77% of the "Doctor's Delay." The average delay for this 10% was 25.9 months per case. The remaining 90% of doctors stood for an average delay of only 0.9 months per case. Sixty-six per cent of the doctors first consulted allowed no delay at all. Twenty-nine, or 10% of the women, applied to a doctor immediately after noticing a lump in the breast, a vast improvement over 1910. It is interesting to note that 2 of the breast cancer cases were in men. The youngest woman reported was 20, another was 21.

UTERINE CERVIX CANCER

In 1910, the physician first consulted did not make a local examination in 10% of the cases. In 1923, the figure was 7%, an improvement, but still too big a figure. Ten per cent of the doctors first consulted in the cervix cases are chargeable with 51% of the delay. The average delay for this 10% was 9.5 months per case. The remaining 90% of doctors stood for an average delay of 0.9 months per case. Fifty-seven per cent of the doctors first consulted allowed no delay at all. Nineteen, or 8.5% of the women applied to a doctor at once after noticing the first symptom, again a marked improvement over 1910. The youngest cervix case was 23, another was 24 years old.

THE BACKWARD TEN PER CENT

The above analysis of the breast and cervix group indicates very clearly that so far as the medical profession goes about 10% still have a great deal to answer for. These are the men who, as Dr. H. K. Pancoast says, "never go to medical meetings and never read the journals," and who take no interest in the notion that if cancer is to be treated successfully it must be treated early. Some of the statements made by these men to their patients would be laughable if it were not for the future tragedy that they imply. A few of these pieces of advice are interesting as showing clearly the nature of the problem of the Backward Ten Per Cent. For instance, a woman with breast cancer was told by the physician first consulted, "Wait till it begins to bleed and then come back and I will tell you what to do." A woman 64 years old was told she had a "caked breast." Bleeding from a cancerous uterus was ascribed to "rheumatism," "return of menstruation," "a cold in the pelvis," etc. One woman had had a hysterectomy for fibroids fourteen years ago, and then began to bleed from a cancerous cervix. She was told she should expect bleeding after (fourteen years) such an operation. A woman with cancer of the body of the uterus was told her condition was "not yet ripe for operation." A man with rectal cancer was not examined, but was ordered "rest and change of climate." Another rectal case not examined was told her bleeding was due to a rupture and a truss was prescribed. "Don't bother it till it bothers you;" "Go home and forget it;" "It is your menopause," were familiar and frequent standbys amongst the Backward Ten Per Cent.

BY THE WAY

The study of these 1249 cancer reports for 1923 has strongly impressed certain points on the compiler. These points were all generally known before, but the insistent way in which they appear again and again has made it seem best to emphasize them.

I. FIBROMYOMATA OF THE UTERUS: These have been connected with cancer in two ways. In the 45 cancers of the uterine body, fibroids have been present before the malignant change in 7 cases, or about 1 case in 6. The very real danger of fibromyomata undergoing malignant change should therefore be definitely kept in mind in weighing the indications for operation in any given case.

In the cervix: Of the 268 cases there were 9 in which a previous supravaginal hysterectomy for fibroids had been done. This shows that it behooves the surgeon who does a supravaginal operation to note carefully the condition of the cervix. It would seem that it is quite essential that at least the lacerated, eroded and inflamed cervices should not be left behind, but should be removed either by a primary panhysterectomy or later by a vaginal operation as seems best. If the cervix is not removed, the patient should at least be kept under close follow-up observation. We believe that many very careful operators do not give the proper attention to the cervix in this connection.

II. CANCER OF THE SKIN: It seems that in skin cancer the doctor is most apt to muddle along. Note in Table II the long doctor's delay in cancer of the hand, arm, face and lip. Why this is we do not know, unless it is that the doctor is tempted to do the best he can with local applications. At any rate, it indicates an important point of attack in the propaganda directed to the medical profession.

III. LECTURES: In many instances where people have applied unusually early after noticing warning symptoms, the doctor has indicated the reason. The reason most frequently given very decidedly is "Heard a lecture on cancer." Dr. Bloodgood, who has perhaps the most intimate personal knowledge of cancer education and its effects, has said before that cancer lectures, especially to women, are the best means of educating the public. Our reports strongly bear out this opinion, and we hope that in future the lecture will be more and more considered the biggest gun.

IV. MICROSCOPIC EXAMINATION OF UTERINE CURETTINGS: In at least two uterine cases a fatal delay was attributable to the microscopic report of curettings for diagnosis being returned nonmalignant. We think that the frequency of such an occurrence is actually much larger, and we feel that it is necessary to call attention very strongly to the fact that sections of curettings at best represent only a very small portion of the tissue at stake, the diagnosis is often very difficult, as there is at times little or no topography, and the report from curettings must frequently be not representative. We therefore think that a negative report on curettings should weigh but little, if at all, in the face of a positive history, physical findings and gross pathology.

V. YOUNGER PATIENTS DELAY LESS: It has been very encouraging to note that the reports clearly show that in general it is the younger patients, especially the younger women, who apply for radical treatment soonest. We believe that this is a direct result of the educational campaign.

VI. OPERABILITY: It is at first sight quite puzzling to note that though patients are applying earlier than in 1910, in many instances the percentage of operability is less. This is undoubtedly due most to the greater use of radium and x-ray and probably in a lesser degree to a general and wise narrowing among surgeons themselves of the limits of operability in cancers of all classes.

VII. CHANGE FROM BENIGN TUMOR TO MALIGNANT: This has aleady been mentioned in the case of uterine fibromyomata. In three of the breast cases the change certainly took place. In one case the benign tumor had been present for twenty-seven years. In a considerable number of other breast cases this change was probable, but could not be accepted as definite on account of meager data. There has seemed to be a tendency recently to deny the importance of change of a benign into a malignant tumor. We deprecate this tendency, feel that this change is a real danger, and that it should always be seriously considered in dealing with nonmalignant tumors. At best they are foreign bodies.

RECOMMENDATIONS

A Cancer Division in the State Clinics: We repeat that we believe this report proves conclusively that cancer education pays, and we urge our successors to continue it by all proper means and with increased vigor under the stimulating influence of success. We think, however, that our most important recommendation, and one which we urge with the greatest possible conviction, is that a cancer divison be added to our State Health Department Clinics. This would to a very large extent eliminate the pernicious influence of the Backward Ten Per Cent. Its greatest usefulness, however, would be in giving poor people a chance for thorough investigation early. There is no doubt that a very large part of the delay in the poor people is because the cost of a proper investigation is so great that they wait till there is a little more ready money, a time which may never come. The $1.00 or $1.50 visit to the physician during his evening office hour is no place to settle the cancer question, and is equally unfair to both patient and physician. It may be argued that our hospitals adequately supply this want. They don't, and we could prove it if this were the time and place for such an unpleasant task.

We urge this, therefore, as the most important work for the future and we hope that the succeeding Commission, backed up by the weight of the entire State Medical Society, surely will make this their major activity for the coming year. Take it before the Legislature if necessary.

The expense of carrying on this additional service in our present establishments will be trifling. Pennsylvania is already a white spot on the tuberculosis map; let's make it a white spot on the cancer map.

Respectfully submitted,

Richard J. Behan,
Fred Fisher,
Henry D. Jump,
Harry H. Penrod,
Edward A. Weiss,
Courtland Y. White,
J. M. Wainwright, *Chairman.*

PROPOSED AMENDMENTS TO THE BY-LAWS*

Chapter 3, Section 1, to be amended by changing the fourth sentence to read as follows:

Each district (censorial) shall hold a district meeting once every two years, in the odd years.

Chapter 3, Section 3, to be amended by adding as the second sentence in Section 3 the following:

A district meeting (councilor) shall be held in each district once every two years, in the even years.

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THE
MEDICAL SOCIETY OF DELAWARE

ORIGINAL ARTICLES

GENERAL PARESIS IN THE DELAWARE STATE HOSPITAL FROM 1920 TO 1924*†

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General paresis, as a disease, occupies a prominent place among the mental diseases, because of its prevalence and its fatal character. Since the finding by Moore and Noguchi of the treponema pallidum in the brain in cases of general paresis, which has confirmed the syphilitic etiology of general paresis, it is conceded: no syphilis—no paresis.

In looking back into the history of this disease, we find that Willis, the anatomist, mentions general paresis in 1672. Haslam, a druggist at the Bethlehem Hospital, recognized the disease in 1798, and the clinical discovery was completed by Bayle, who gave the first account of the disease in 1826. The clinical period was followed by the anatomical in the evolution of our knowledge of this disease. Rokitansky, Westphal, Mendel, Mickle, Alzheimer, together with many others, are the pioneers in the anatomical investigation of the brain in this disease. General paresis was established as a disease entity with a characteristic pathology in 1904.

The history of the development of the etiology of general paresis is especially interesting. Edgar Sheppard in his lectures on "Madness" in 1873, mentions as causes of general paresis "fastness and looseness, wear and tear, imperfect nutrition, and excessive intemperance and debauch, also sexual excesses, mental overexertion, and traumatism." Naecke in a most careful investigation on 100 paretics found that in 50% there was a history of inheritance of mental defect. Everything under the sun was blamed for the actual causes of general paresis, but syphilis was only suspected as a cause of this most terrible mental disease. Little by little evidence came to light, and revealed it true nature through the remarkable researches of Roux, Metchnikoff and Shaudin. This disease at one time was looked upon as a para- or metasyphilitic disorder. Fournier was largely responsible for this, but the researches of Noguchi, Moore, Marie and Levaditi, who have found the Treponema pallida in the brains of general paretics, have proved that this is an active syphilitic process.

Fortunately only a small percentage of syphilitic infection produces paresis. Recent studies of Mettler show that about 3% of infected and untreated syphilitics develop paresis. Therefore it is evident that other contributing and predisposing factors must play a rôle. Bolton thinks that those patients develop paresis who originally had a constitutionally defective type of cortex. Among these predisposing and contributing factors are: intellectual overwork, nervous overstrain, alcoholism, sexual excess, and trauma.

General paresis is one of the most insidious forms of mental diseases, as regards its gradual onset. The recognition of the disease in its earliest stages is very difficult. The discovery of the disease does not really indicate its commencement. For some time previously there may have been symptoms, such as sleeplessness, tremor, depression, dull headache, ophthalmic migraine, general malaise, and digestive disorders, which led to its being mistaken for neurasthenia. Though the above mentioned symptoms may suggest that the patient is suffering from neurasthenia, a more detailed examination soon reveals that this suggestion is remote. During this early stage there is usually evidence of intellectual failure, lack of attention, some failure of memory, irritability and depression. Following the depression, and occasionally alternating with it, is excessive mental activity. The patient is full of new ideas, neglecting his business and family. At this period, abuse of alcohol is very often the case. For this reason toxic disturbances complicate the clinical picture, making the diagnosis more difficult.

There are a number of physical symptoms which are helpful in this early stage of diagnosis, such as diminished, lost or exaggerated tendon reflexes, tremor of the hands, lips or tongue, slight difficulties of articulation, slight inequality of pupils and slight apoplectiform or epileptiform seizures. A correct diagnosis in these early stages may be of great importance, when a patient occupying a position of public trust involving lives in the community, such as engine driver, chauffeur, officer and so on, is brought to the medical man for his diagnosis.

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*Read before the New Castle County Medical Society, Wilmington, Del., March 18, 1924.

†From the Delaware State Hospital.

Be very suspicious, therefore, when a strong, industrious, devoted man suddenly begins to neglect his family and business, when he is unable to concentrate, when his apperceptions become clouded and his judgment confused, when he becomes easily excited, when he dallies and delays and seems to be wanting in initiative, when he is easily wearied mentally and physically, becomes immoral, obscene and indifferent to everybody and everything, egotistic, or on the other hand is melancholy and hypochondriacal.

A few years ago one of our state officers, occupying a responsible position, was sent to our institution as an alcoholic case, but which proved to be a case of general paresis in a well-established form. This patient previous to his admission, investigated, in his official capacity, an accident case on the highway, which occurred opposite our hospital. He showed prodromal symptoms of general paresis which both Dr. Hancker and myself noticed at the time. At the prodromal stage the crucial diagnostic test is the examination of the blood and spinal fluid for the Wassermann reaction, which should never be neglected. This period ranges over months or sometimes several years. Gradually the mental and physical symptoms become more pronounced, until the disorder is fully established. At this stage general paretics are usually admitted to state hospitals.

I will now give you some data concerning general paresis treated in the Delaware State Hospital at Farnhurst within the past few years: On January 1, 1920, there were 507 patients on the books of the hospital. Among these there were 30 syphilitics, or 5.9%. During the period of four years from January 1, 1920, to January 1, 1924, there were 456 new admissions, of whom 274 (or 60%) were males, and 182 (or 40%) females. In the same group were included 86 syphilitics (or 18.9%) of all admissions, there being 61 males (or 22.3%) and 25 females (or 13.7%). These figures show that one patient in every five was admitted on account of syphilis. The New York state hospitals show the same figures.

Among these 86 cases of syphilis there were 61 cases of general paresis, or 13.4% of the new admissions—48 males (or 78.7%), and 13 females (or 21.3%).

From the above figures it will be seen that general paresis claims nearly four times as many males as females. Not only the present statistics of most of the state hospitals in this country but even the Lunacy Blue Book of England and Wales showed the same figures in 1885. Probably the cause of the sexual disproportion lies mainly in the greater frequency with which the male indulges in excess, especially alcoholic. But the more exhausting effect of sexual excess in men, the greater frequency of their intemperance in alcohol, and greater liability to syphilis and to injury do not explain all.

In regard to the race distribution, there were 52 syphilitics among 354 white admissions (or 14.7%), and 41 general paretics (or 11.6%). There were 34 syphilitics among 102 negro admissions (or 33.3%), and 20 general paretics (or 19.6%). These figures show that one out of 7 white, and one out of 3 black, was syphilitic, and also one out of 8 white, and one out of 5 negroes was paretic. Comparing these two races with respect to the rate of syphilis and paresis, we find that the rate is more than twice as high among negroes as among whites.

The onset of general paresis occurs principally during middle life. The average age of the paretics at the time of first admission to this hospital was approximately 42 years. The youngest patient was 22 years old; the oldest, 72 years.

We find a very high percentage of deaths in the general paresis group; 39 out of 72 treated paretics died during these 4 years, or 54.2% of all paretics. The fatal character of paresis is evident from the above figures. General paresis is a type of mental disease from which exceedingly few persons recover. From 963 treated patients during the four-year period, 205 were discharged, but of this number only 11 were patients with general paresis. The condition in which they were discharged was: none recovered, eight improved, and three unimproved.

The duration of paresis has been given by Phillips of the Pennsylvania Hospital as 2 years for men, and 2 years and 9 months for women. Kraepelin gives the usual duration as 3 to 4 years, occasionally lasting 7 years.

At our hospital the longest period of residence of paretics was 5 years, 3 months and 15 days, the shortest period was 29 days. The average duration of hospital residence was 1 year, 5 months and 2 days.

Our cases of general paresis came principally from the cities, 84% being from urban communities and only 16% from rural districts. The environment of the population of the U. S. as a whole is 51% urban and 49% rural. The terms urban and rural are used as in the U. S. census classification, urban applying to places having a population of 2,500 or over, all other places being considered as rural.

With respect to the economic condition at first admission of general paretics we found that 45.8% were dependent (lacking the necessities of life), 40.3% marginal (living on daily earnings), and 13.9% comfortable.

In regard to the marital condition, 12.5% were single and 59.6% married, 15.3% widowed and 12.6% separated or divorced.

In regard to the use of alcohol, it was found that 68% of general paretics were intemperate. The intemperate use of alcohol appears prominently in the history of paretic cases. At one time this association between alcoholism and paretics seemed so close that many, especially the French authors, believed alcohol to be a causative factor in the disease.

Our cases of general paresis claimed their victims from every walk of life, but not with equal frequency. The rate is very high among the laborers; next to them, those engaged in domestic and personal service. The low rates were found among farm laborers and farmers.

Ninety-five per cent of our general paretics were typical cases with well defined physical signs. On admission, the examination of the pupils gave the most valuable objective signs, irregularity of the pupils being most frequent. The pupils, instead of being circular, were irregularly angular, usually unequal in size, and the Argyll-Robertson phenomenon was present in about 48% of the cases. More often the reaction was sluggish to light rather than inactive. The importance of changes in pupil reaction first was described by Baillarger in the *Gazette des Hopitaux,* May 14, 1850.

The majority of our patients had tremor in the hands, lips and tongue. In protruding the tongue there was rapid, jerky tremor at the beginning of the movement. In a few cases of paresis we have noticed the tremor affected all parts of the body. Tendon reflexes, triceps, radius, knee-jerks and Achilles were exaggerated in the majority of the cases. In a few cases these reflexes were diminished, and in a few cases, such as tabo-paretics, these reflexes were absent.

Some of the alterations of speech are of psychical, and some of somatic origin. In almost every case we found hesitancy, stammering, drawling, stumbling and slurring over certain letters, especially r's and l's, in such words as "artillery men," "truly rural," "electricity," "third cavalry brigade," and so on. The omission of words, syllables and letters is characteristic. Similar defects occurred in written speech as in vocal. About 45% of treated, and 95% of untreated paretics had seizures of various kinds, such as congestive with slight fainting fit, apoplectic and epileptic form. In a very few cases, following these seizures there was permanent hemiplegia.

Most of our patients showed defects of retention and memory for both recent and remote events; also loss of judgment. All of our cases of general paresis at one time suffered from delusions of grandeur. The most striking feature about these delusions is the fact that the paretics are not embarrassed by contradiction. While boasting of his millions or his diamonds, he will beg for the money to buy a cigar or some tobacco. These grandiose delusions have always been recognized as a special feature of the disease. Some very few cases have delusions of persecution, with marked depression, but upon suggestion the patient will change his delusions, entirely unlike the paranoiac. The most constant symptom of our cases was dementia, that is, a slow, but certain enfeeblement and final effacement of every function of mind, and this loss of mind is proportional to the loss of cortical gray matter.

In the second stage most of the patients put on flesh and for a time remain in this fat condition. Later in this stage they do not obey the calls of nature, are dirty in their habits, do not take any interest in their surroundings, and have little or no knowledge of time or place. Those cases pass from the second to the third, or cachectic and terminal stage. Their walk is tottering and shaky, they have to be fed, and there is nothing more pitiful or degraded than the sight of these wrecks of humanity.

It is difficult to make the diagnosis of general paresis from the clinical picture alone, except those cases which are typical. General paresis may assume the characteristics of many forms of mental disorders, and the neurological signs may be essentially wanting. There are certain forms of cerebral pathology which may give a clinical picture quite suggestive of general paresis, such as cerebral syphilis, chronic alcoholism, dementia præcox, cerebral tumors and abscesses, and epileptic dementia. In such atypical cases the serological findings are the most important in establishing the diagnosis of paresis. The Wassermann reaction in the blood is positive in 100%. The next general accepted rule is that cases of general paresis will give a positive serology in the cerebrospinal fluid (when large quantities, two c.c. of fluid are used). The globulin test, and also lymphocytosis or pleocytosis are important. The diagnosis of paresis should not be made in the laboratory, as the importance of the neurological and mental relation is fully recognized. All our cases of general paresis gave positive Wassermann reactions before treatment, and 95% of cases after treatment.

The problem of the treatment of general paresis is a difficult one, due to the lack of any sufficiently powerful spirocheticidal drug. We must use methods at our command more intensively than is necessary in certain other forms of syphilis. While treatment of paretics in our hospital, as well as in others, has not been quite satisfactory, we have in the same period of time, treated successfully many cases of nonparetic syphilis with injections of neoarsphenamine, mercury and potassium bismuth tartrate.

Most of the methods of treatment in paresis have not proved successful. All observers of this disease are of the opinion that if it is to be successfully combated, it must be diagnosed early and treated energetically. On the other hand, Mott states that he has come to the conclusion that no case of general paresis has been cured or even greatly benefited by any treatment with salvarsan or neosalvarsan, whether administered intravenously or intramuscularly.

Oppenheim says that those cases in which a remission of symptoms occurred after treatment may be explained by coincidence, for we know very well that cases have remissions without any treatment. Those in which cure is claimed by enthusiasts may be due to error in diagnosis. In our own experience remissions of one to three years' duration are very frequent in patients who have received treatment, occurring at least three times as often in treated as in untreated cases and lasting much longer. The majority of our patients whom we have treated have lived more than two years after their admission to the hospital. But in general paresis the treatment must be pushed to the limit of the patient's tolerance. Arsphenamine must be given at frequent intervals over a considerable period of time. At the present time we have adopted the procedure of combining intensive intravenous injections of neoarsphenamine with intramuscular, intragluteal injections of potassium bismuth tartrate, with weekly spinal drainage and possibly in the future ventricular injections of arsphenaminized serum.

Balzer was the first who experimented with bismuth with the idea of treating syphilis in 1889, but he was unsuccessful, as most of his patients developed a severe stomatitis. Since then bismuth was abandoned in the therapy of syphilis. In 1921 Sazera and Levaditi first used bismuth successfully in the treatment of syphilis. Though these methods of treatment have not proved as successful as one might wish, there is no doubt that out of these efforts some good results are sure to come.

A few words about the therapy of inoculation with malaria in general paresis. The first experiments on the effects of malaria on general paresis were made at the clinic for psychiatry in Vienna in 1917 by W. V. Jaurezy. J. Gerstmann in his last report states that since 1919 some 40% of 340 cases treated by this method have regained their full working power and are free from demonstrable psychical defects. The Wassermann reaction in the blood serum and spinal fluid of these treated by this method became negative. In the near future we hope to be able to treat a few cases with inoculation with malaria to see the effects of the treatment.

H. C. Solomon in his study of effects of antisyphilitic therapy states that antisyphilitic treatment of patients with general paresis, affects the histologic picture; secondly it tends to reduce plasma-cell infiltration of the perivascular spaces, so that in many cases there are fewer plasma-cells than are commonly found in untreated cases. Perivascular lymphocytosis is often reduced in amount by treatment. The present day aim from a scientific medical standpoint is preventive medicine. We are constantly seeking methods of preventing disease in order to improve the health of the people, so that they may increase their efficiency and propagate their kind, free from constitutional defects and hereditary tendencies.

In a large majority of cases of syphilis, immediately following infection the patient regains his usual health and passes from medical observation, at least so far as concerns the syphilis. The duty of the attending physician is to follow these cases of syphilis, and examine them mentally, physically and serologically once or twice yearly for a period of ten years, in order to prevent the developing of this horrible disease, general paresis.

The outstanding facts concerning general paresis as shown in this paper, may be summarized as follows:

Of all new cases admitted to the Delaware State Hospital for mental diseases over 13% have this disease.

It claims nearly four times as many males as females.

The great majority of admissions with the disease are in early middle life.

A much greater proportion come from urban than from rural communities.

It claims twice as many negroes as whites.

Intemperance is found in 68% of persons admitted with general paresis.

It claims for the most part married men and women.

The disease has a very low improvement rate and a very high death rate.

It is less severe among women than among men.

The treatment of general paresis is still in an embryonic stage.

The prevalence and fatal character point out the urgent need of more extensive and intensive efforts to check the spread of syphilis, and emphasize the importance of applying treatment in the early stages of the disease, so that its later disastrous development may be prevented.

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J. Grestmann: Ueber den jetzigen Stand der Malaria Therapic der Progressive Paralysis.

S. Orton: Some Considerations of General Paresis from the Histological Standpoint.

J. A. Kolmer: Infection, Immunity and Specific Therapy.

Alan Finlayson: Results in Treatment of General Paresis by Innunctions of Mercury and Drainage of Cerebrospinal Fluid. American Journal of Insanity, 1918.

E. Furbush: General Paresis in State Hospitals, Mental Hygiene, 1923.

H. C. Solomon: General Paresis. The American Journal of Psych., 1923.

EDITORIAL

WHEN APPEARANCES DECEIVE

A few years ago, I would have smiled to myself if a man in medical work had told me the facts I have had presented to me within the past year or two. I would have classed him as a crank or something of the sort, and I would most certainly have disbelieved his statements. I would have thought he had an exaggerated ego on the subject, etc. *Now* it is an entirely different story!

I want to say to my co-workers in the medical profession that the old legal theory that "every man is considered innocent until proven guilty" works entirely in an opposite manner in a venereal disease clinic. Every man (and woman and child) is "guilty until proven innocent," it now seems!

I was placed in charge of the V. D. Clinic at Dover a couple of years ago. I took up the work half-heartedly. I "didn't believe" all the stories the U. S. Public Health Service told and the State Board of Health published. I thought the V. D. work was worthy, but I believed it to be a work of short duration. I thought that our soldier boys brought back with them many little French germs that we should and could easily stamp out: Gosh! Our soldier boys did bring many, many things back from France beside French brides, but I have discovered that our American brides and our American soldiers, and others, had little germs (that were not German), before they thought of entering the Great War. Syphilis was not "born" in the United States; but it surely has obtained a permanent residence here, and so has gonorrhea and chancroid.

Now, this brings me to the point of this editorial. In the first place, we are apt to believe a man is "pure" and "wholesome" because he is a minister of the Gospel or a superintendent of a Sunday school. We say, "Mr. So-and-So has many symptoms of gonorrhea, but *he* cannot have it, because he is the most moral man in Squadig"; or, "the Rev. Dr. Brown surely has a soft chancre, but it cannot possibly be *that;* I must be mistaken." And we follow our American teaching that every woman is inviolate and innocent, so when little Mary Jones, aged fourteen, comes in to see us, we discard a gonorrheal vaginitis as *impossible;* and again, when Mrs. Blank, wife of the president of the bank and a leader in the W. C. T. U., comes in with syphilitic symptoms, we ignore them because of her reputation and position. How blinded we are by the locale of the patient!

I have, within the past three short years made some "miraculous cures." Cases that have been treated for months by able and conscientious physicians without success, have been made well in a short time by your humble servant. Cases of years' standing, hopeless and desolate, rich and poor, black and white, have reacted successfully to our treatment. Why?

The Dover Clinic is very small. It is only open one afternoon a week, but its results are all out of proportion to its size and time! I take no credit upon myself. I receive only cases sent to me by other physicians, because the state and the government give free all treatment through our Clinic. But I find that so many, many cases that do not react to regular treatment—cases of Bright's disease, of jaundice, of palsy, of rheumatism, and of a list as diversified as the dictionary of diseases, all having refused to respond to the regulation treatment for each specific disease, get "cured" in a short time via the V. D. route! I am becoming almost a cynic, and starting to think that *all* diseases are the result of the "original sin."

I do honestly believe that very many of the so-called "obscure cases" we hear of, can readily be cured with neoarsphenamine or mercury. I believe that too many middle-aged women of position are permitted to die from "diabetes" or "high blood pressure," "cirrhosis of the liver," etc., who could easily be brought back to health by "606." Many, far too many, young girls die from acute salpingitis and "decline," etc., who could have been saved by a proper treatment for gonorrheal vaginitis. Lots of young men, and old men too, are buried when a vigorous line of treatment for cystitis, prostatitis, or syphilis could have kept them alive.

And why? Why not treat the disease properly? Because, in most cases we do not believe Mr. or Mrs. or Miss could *have* such a disease—thy are too respectable, too religious, or too moral! Their reputations are above reproach! So we let their "reputations" kill them!

After these two or three very short years, I have come to believe that most of these obscure cases are of syphilitic origin, regardless of age, color, class or sex. And I find that I am very seldom wrong in my diagnosis. I could give a long list of disases, each having all of its proper symptoms and signs, that showed a positive four plus Wassermann reaction and did not get well until the proper treatment was given. I could give a lengthy, itemized list of diseases of women, each of which upon examination showed the little pet, "gonococci," lurking somewhere along the genital tract!

Yesterday I had a five-year-old colored girl, cute, healthy, fat, and (dare I say?) pretty, with a gonorrhea of the vulva! A thirteen-year-old boy who lives next door is suspected. And twenty minutes later a white man, active in church work, sixty-eight years old, came in with a good ripe case of "clap" which he said he contracted from the nineteen-year-old organist of the Mission Church he is interested in! Following him I treated a scrub woman, who is the mother of eleven children, with a four plus Wassermann reaction, who claimed she got it from the elevator boy, aged 18! Let me say, that if any doctor in our little state has a case that will not react to ordinary treatment, make a blood test, or a vaginal or urethral smear! The information may be most illuminating.

"An apple a day keeps the doctor away" is a cute and popular rhyme, but it was the apple, so our clerical friends say, that put that little "bug" in our blood and other parts of our anatomy that has caused the "sins of the fathers until the third and fourth generation" to follow the human race. And it is the same little "bug" that makes me suspect that every man and woman, white or black (age no object), has a little "V. D. bug" hidden away somewhere in his person, when ordinary treatment for ordinary diseases fails. I may be wrong, but appearances seem to point that way.

If you do not get results from your treatment of a specified disease, try a laboratory test of blood and excretions; you may be very much surprised and perhaps shocked, but I believe you will find that it will pay both your patient and yourself.

C. deJ. H.

INVITATION TO AMERICAN PHYSICIANS

The Tri-State District Medical Association is supervising an Interstate Postgraduate Clinic Tour to Canada, British Isles and France to start May 18, 1925. Leading teachers and clinicians of Canada and Europe will arrange and conduct clinics and demonstrations in the following clinic cities:

Toronto and Montreal, Canada; London, Liverpool, Leeds, Manchester and Newcastle, England; Edinburgh and Glascow, Scotland; Dublin and Belfast, Ireland; Paris, Lyon and Strasburg, France.

Besides the main tour, special tours to practically all the leading centers of Europe will be arranged. Sightseeing trips to all places of interest in the countries visited will be included in the regular tour.

Cost of tour, including first-class hotels, board, steamship, clinic arrangements and all ordinary traveling expenses, under $1,000.00.

The tour is open to physicians in good standing in their State Societies, their families and friends who are not physicians.

For information, write the Managing-Director, William B. Peck, Freeport, Illinois.

Dr. George W. Mackenzie and Dr. Charles Hollis, of Philadelphia, have returned from Vienna where they attended the classes in otolaryngology.

In Recognition of the far-reaching developments of bronchoscopy in the diagnosis and treatment of diseases of the lungs and of esophagoscopy and gastroscopy in the diagnosis and treatment of diseases of the esophagus and stomach, the Board of Trustees and Faculty of the Jefferson Medical College have created a new Chair to be known as the Department of Bronchoscopy and Esophagoscopy. Dr. Chevalier Jackson, formerly Professor of Laryngology in Jefferson, has been elected to the Professorship of the new department. Dr. Fielding O. Lewis has been elected to fill the Chair of Laryngology vacated by Dr. Jackson.

BOOKS RECEIVED

The Nature of Love. By Emmanuel Berl. Authorized Translation by Fred Rothwell. New York. The Macmillan Company, 1924. Price, $2.00.

Diabetes. Its treatment by insulin and diet. A handbook for the patient. By Orlando H. Petty, B.S., A.M., M.D., F.A.C.P., Professor of Diseases of Metabolism, Graduate School of Medicine, University of Pennsylvania. With several illustrations. Philadelphia: F. A. Davis Company, 1924. Price, $1.50 net.

The Internal Secretions. For the use of students and physicians. By Arthur Weil, Assistant Professor in Physiology at the University of Halle. Authorized Translation of the Third German Edition by Jacob Gutman, M.D., Phar.D., F.A.C.P., Director Brooklyn Diagnostic Institute. New York: The Macmillan Company, 1924.

The Medical Department of the United States Army in the World War. Volume XI, Surgery. Prepared under the direction of Maj. Gen. M. W. Ireland, M.D., Surgeon General of the Army. Washington: Government Printing Office, 1924.

Manual of the Diseases of the Eye. For students and general practitioners. By Charles H. May, M.D., Director and Visiting Surgeon, Eye Service, Bellevue Hospital, New York; Consulting Ophthalmologist to the Mt. Sinai Hospital, to the French Hospital, to the Italian Hospital, New York, and to the Monmouth Memorial Hospital. Eleventh edition, revised, with 374 original illustrations including 23 plates, with 73 colored figures. New York: William Wood & Company, 1924. Price, $4.00.

Chemical Dynamics of Life Phenomena. By Prof. Otto Meyerhof, Kiel. Philadelphia and London: J. B. Lippincott Company. Price, $3.00.

The Surgical Clinics of North America (Issued serially, one number every other month). Volume 4, Number 3 (Chicago Number—June, 1924), 245 pages with 108 illustrations. Per clinic year (February, 1924 to December, 1924. Paper $12.00; Cloth $16.00 net. Philadelphia and London: W. B. Saunders Company.

Principles and Practice of Obstetrics. By Joseph B. DeLee, A.M., M.D., Professor of Obstetrics at the Northwestern Medical School. Fourth edition, thoroughly revised. Large octavo of 1,123 pages, with 923 illustrations, 201 of them in colors. Philadelphia and London: W. B. Saunders Company, 1924. Cloth $12.00 net.

Medical Gynecology. By S. Wyllis Bandler, M.D., Professor of Gynecology, New York Postgraduate Medical School and Hospital. Fourth edition, thoroughly revised. Octavo of 930 pages, with 157 original illustrations. Philadelphia and London: W. B. Saunders Company, 1924. Cloth $8.00 net.

A Treatise on the Practice of Medicine. By Clarence Bartlett, M.D., Professor of Medicine in the Hahnemann Medical College of Philadelphia; Physician-in-Chief to the Hahnemann Hospital of Philadelphia; Consulting Physician to the Abington Memorial and McKinley Hospitals. Vol. I: The Infectious Diseases, Intoxications, Deficiency Diseases, Disorders of Metabolism and Diseases of the Muscles. Pp. 743. Vol. II: Diseases of the Blood, Circulatory and Respiratory Organs, and the Digestive and Urinary Systems. Pp. 826. Vol. III: Diseases of the Endocrine Glands, Bones, Joints, and Nervous System, Materia Medica and Therapeutics, and Therapeutic Guide and Index. Pp. 676. Philadelphia: Hahnemann Press, 1924. Price $20.00 for the set.

Twelfth Annual Report of the Medical Department of the United Fruit Company, Boston, Mass.

Diabetic Manual for the Mutual Use of Doctor and patient. By Elliott P. Joslin, M.D., Clinical Professor of Medicine, Harvard Medical School; Consulting Physician, Boston City Hospital; Physician to New England Deaconess Hospital. Illustrated. Third edition, thoroughly revised. Philadelphia and New York: Lea & Febiger, 1924. Price $2.00.

Anesthesia. By James Tayloe Gwathmey, M.D., First President of American Association of Anesthetists; Anesthetist to the New York Skin and Cancer, Columbia, and Peoples Hospitals. With collaborators on special subjects. Illustrated. Second revised edition. New York and London: The Macmillan Company, 1924. Price $6.50.

Dr. O. Pine queries: How irritable it is to a rational being to be compelled to listen to the great one chronically airing a disproved hobby, which a little one could not deliver, entirely, once to an audience of one?

BOOK REVIEWS

SEXUAL PROBLEMS OF TO-DAY. By William J. Robinson, M.D. Twelfth edition, 340 pages. The Critic and Guide Company, 12 Mt. Morris Park, West, New York. Price $2.00.

The twelfth edition of this book represents the author's personal opinions, which have not undergone much change in recent years.

It is recommended for general reference by those who may express special interest in this subject.

A. C. M.

ABT'S PEDIATRICS. Volume 3. W. B. Saunders & Company. 1051 pages. Gastro-Intestinal Physiology, Nutritional Disturbances, Mouth, Tongue, Nose, Pharynx, Orthodontia, Harelip, Etc., Gastro-Intestinal Tract, Liver Pancreas, Respiration, Nose, Larynx, Respiratory Disease, Pneumonia.

The first article by Dr. Clemens Pirquet, Vienna, Austria, on the "Nem System of Nutrition" is naturally of much interest. Dr. Pirquet has used this system of nutrition in his clinic since 1917. It consists of two parts. A new name for a food unit, and a new way of determining the food requirements of the individual. He claims that for clinical purposes a standard unit of physiologic nutritive value is needed, to take the place of the chemical or physical unit hitherto employed and also claims that the "Nem" system is more accurate than the system of calories.

Milk, since it contains all the principal food substances, fat, carbohydrates, albumen, water and salts, is selected as the basis of the standard of value. One gm. of milk during the process of oxidation will produce in heat value 667 small calories.

The "Nem" is the metric unit of nutrition or the nutritive value of 1 gm. of milk. The multiples of unit are named after the metric system.

Dekanem—Dn, the nutritive value of 10 gm. of milk.

Hektonem—Hn, the nutritive value of 100 gm. of milk.

Kilonem—Kn, the nutritive value of 1,000 gm. of milk or about one liter of milk.

Using the substitute process as a control to determine the value of any food, a portion of the milk is taken from an infant and some other food substituted. Observation will prove if the child increases in weight and growth as well as when fed alone on milk.

It is claimed that tests of this kind can be carried out to any desired extent, whereas metabolism experiments are of short duration. In adults, milk can be given as the main diet and then replaced by the article of diet to be tested.

The utilization of the various articles of food, Nems as applied to infant feeding, and the determination of the food requirements of the individual are discussed in an interesting manner. Dr. Pirquet claims that the idea that metabolism is so much quicker in the young child, owing to growth, etc., is erroneous. He claims that it is not the age that determines the caloric requirements, but the size, since an adult dwarf, the size of a child of a few years, requires the calories needed for the child and not for the adult, calories not depending on weight or age but on size.

"Physiology of the Gastro-Intestinal Tract of Infants and Children," by May Michael, M.D., of Chicago, Ill. Thirty pages. Under Physiology of the Mouth it is shown that the salivary glands are active soon after the child's birth and are actively stimulated by milk, contrary to the usual rule, according to which the drier the food the greater the amount of secretion. The saliva in infancy is especially of the thick viscid variety produced by the submaxillary glands.

The importance of the reaction of the saliva is discussed and its influence on the bacteriologic flora of the mouth and the ferments. It is claimed that directly after the child's birth it has the power of converting starch into sugar.

Under Physiology of the Stomach, motor considerations are first taken up. It is pointed out that the stomach is not simply a reservoir. With the motor function as a basis, the stomach is divided into three parts—the fundus ventriculi, the corpus ventriculi, and the pars pylorica with the antrum pyloricum. Peristaltic waves pass over the corpus ventriculi from fundus to pylorus soon after the stomach is filled. At first they are superficial but soon become deeper and deeper until at the antrum pyloricum there is complete closure of the lumen and for a time the antrum is completely separated from the rest of the stomach. The emptying of the stomach in children is discussed both as to time and the different food elements.

Hunger contractions are considered in an interesting manner. The secretion of gastric juice by the mucous membrane of the stomach of the fetus and newborn infant is discussed and the various theories accounting for it are considered. The possibility of bacterial infection playing a part in the process of rennet coagulation is of interest.

The physiology of the pancreas, liver, small and large intestine, is discussed and also the bacteriology of the digestive tract.

"Intestinal Bacteriology," by Arthur Isaac Kendall, Ph.A., Dr. P. H. of Chicago, Ill. Forty pages. The writer pays tribute to Escherich, the founder of the science of intestinal bacteriology. The structure and energy requirements of bacteria are considered in a most up-to-date manner and fermentation and putrefaction are discussed carefully. Of special interest is the study of the Intestinal Bacteriology of Infancy and Adolescence; Their Relation to the Intestinal Environment and Their Response to Dietary Alternations. This portion of the article can be read with profit by almost all physicians as well as by the trained pediatrician.

"Diseases of the Mouth and Tongue," by Thomas B. Cooley, M.D., of Detroit, Mich. Thirty pages. He considers teething a normal physiological process and believes that only slight and transient disturbances are incident to normal dentition. He believes that slight elevation of temperature, occasional vomiting, constipation or looseness of the bowels may be present without any other discoverable cause than teething. In normal children graver symptoms are probably never excited by teething alone. Almost all pediatricians certainly agree with Dr. Cooley. The various forms of stomatitis are taken up and also diseases of the tongue.

Dr. James S. Stone of Boston writes an excellent article of eighteen pages on "Harelip, Cleft-Palate and Allied Malformations." In lip operations he prefers to have the baby held upright in the nurse's lap. The various operative procedures of the different malformations are described with clearness and the diagrams and photographs are very helpful.

The chapter of fifty pages on "Orthodontia," by B. G. de Vries, D.D.S., of Minneapolis, Minn., is an interesting and instructive chapter and, of course, is of special interest as many of our young patients must consult the orthodontist and we all appreciate how important his work is. The normal development of superior and inferior maxillæ is explained with care, while the growth of the jaws and the maldevelopment induced by systemic disorders and local causes are clarified by a number of unusually good illustrations. The author believes that in many children orthodontic work should begin early, in some as young as two years.

"Affections of the Cervical Lymph Nodes," by Daniel N. Eisendrath, M.D., of Chicago, is well cared for in twenty pages. He considers the order of frequency of infections of the cervical lymph nodes in children is: (1) infections due to acute pyogenic organisms; (2) infection by the tubercle bacillus; (3) Hodgkin's disease; (4) lymphatic leukemia; (5) lymphosarcoma; (6) syphilis. Each one is considered briefly. Under acute pyogenic infections of the lymph nodes, the author writes: "No effort should be made to remove the primary atria, such as the tonsil or carious teeth, during the acute stage." Cysts and fistulæ of congenital origin are ably discussed and well illustrated.

Dr. Henry Dietrich of Los Angeles, California, discusses in a short but interesting article the "Diseases of the Salivary Glands." The comparative anatomy of the glands of the mouth, diseases of the glands in animals and the diseases of the glands in man are first considered. Then follows a discussion on the diseases of the salivary glands occurring at birth, early infancy and childhood.

Dr. Harold M. Hays, New York, contributes an article of thirty pages on "Diseases of the Pharynx, Nasopharynx and Hypopharynx." In discussing the function of the tonsil, he draws attention to the fact that the tonsil is often surrounded by extra-tonsillar lymphatic tissue. These glands are seldom visible but often increase considerably in size after the tonsils are removed and may form a definite chain of glands. He advances the theory that their development is an effort of nature to develop some protective tissue that could take the place of the removed tonsils. He draws attention to the fact that hypertrophy, following infection of the tonsils in early life, is evidence that the tonsils have a function. Hays believes that the tonsils have a definite function in infancy and early childhood, and that they should never be removed before the end of the second year unless the circumstances are exceptional. Attention is drawn to the fact that investigators have stated that the tonsils produce an internal secretion which is of value.

Dr. Isaac Arthur Abt of Chicago contributes an excellent article of one hundred pages on "Nutritional Disturbances of Infancy." Under "Protein" he states: "Infants who are convalescent from nutritional disease or who are passing through the so-called reparation period and who have lost markedly in weight, require larger amounts of protein than normal babies. Continued protein starvation is incompatible with life."

He also quotes Nassau's conclusions as follows:

1. "Infants who are not thriving, and who have no diarrhea, will gain weight if the protein content of the food is increased to four to five times the normal. Injury resulting from excessive protein feeding probably does not occur."

2. "Occasionally the baby will not improve and the stools continue to show undigested material despite the increase of protein."

3. "As long as acute intestinal manifestations are absent, indicanuria does not occur with excessive protein feeding. In dyspeptic diarrhea, indican is found in the urine. It will disappear when the acute intestinal symptoms are overcome by the further addition of protein to the diet."

Under classification of nutritional disturbances he draws attention to the classification of Czerny and Keller and also to the classification of Finkelstein.

Czerny and Keller's classification:

1. Nutritional disturbances ex alimentatione (due to food):
    - (a) Fat—identical with milk.
    - (b) Carbohydrates:
        1. Starch.
        2. Sugar.
    - (c) Protein—casein.
    - (d) Salts.
    - (e) Scurvy.
2. Nutritional disturbances ex infectione (due to bacteria):
    - (a) Ileocolitis.
3. Nutritional disturbances due to congenital debility or defect:
    - (a) Exudative diathesis and other diatheses.

Finkelstein's classification:

1. Nutritional disturbances without specific organic changes:

A. Alimentary disturbances.	1. Dystrophy (inhibition of building up, equilibrium, gradual building up).	(a) Simple form (without diarrhea). (b) Dyspeptic form (with diarrhea).	Of purely alimentary, alimentary - constitutional infectious, post infectious, mixed origin.
	2. Decomposition (rapidly progressing emaciation).		
B. Toxicoses.	1. Mild or rudimentary ("acute dyspepsia"). 2. Severe form.	Alimentary intoxication, intoxication as symptom of infections, intoxication of mixed origin.	

2. Nutritional disturbances with specific organic changes (infantile scurvy, alimentary anemia, keratomalacia).
3. Alimentary symptoms of specific nature in constitutional disturbances (laryngospasm, eczema, lymphatic hyperplasia).

Abt follows largely Finkelstein's classification.

"Gastro-Intestinal Disturbances in Older Children" is well taken care of by Clifford G. Grulee, M.D., of Chicago, Ill. Of special interest is the portion on catheterization of the duodenum in infants.

"Celiac Disease" is carefully described by W. McKim Marriott, M.D., of St. Louis, Mo. Herter's theory that the condition is due to the overgrowth of gram positive bacteria is discussed and the symptomatology of the disease is given with great care and its course and prognosis are outlined. In the treatment the importance of cheerful surroundings, fresh air, sunshine and diet are insisted upon.

The "Surgery of the Gastro-Intestinal Tract in Children" is allotted almost 200 pages. This article is written by Dr. Harry M. Richter of Chicago, Ill. In hypertrophic pyloric stenosis, under preoperative preparation, Dr. Richter suggests giving water by rectum or subcutaneously. He also suggests the use of 3 to 5 per cent glucose solution given intravenously, preferably with a syringe, using a fine needle. Several ounces—possibly up to 12 or 16—can be given during the 24 hours preceding the operation. He prefers ether anesthesia, but believes local anesthesia entirely rational. My personal experience is decidedly in favor of local anesthesia. Dr. Richter advises, of course, the Rammstedt operation. It is claimed that in a well conducted hospital the abdomen should be opened within one to three hours following a typhoid perforation.

"Direct Laryngoscopy, Bronchoscopy and Esophagoscopy" are well taken care of by Dr. Stanton A. Friedberg of Chicago, Ill.

Edward A. Morgan, M.B., of Toronto, Canada, recommends prophylactic inoculation with pneumococcus vaccine in outbreaks of pneumonia in institutions or military camps. He advises the plan suggested by Lister in South Africa. Lister administered three doses of vaccine consisting of a mixture of Types I, II and III at intervals of seven days. He believes prophylactic inoculation might be of advantage in those children who seem particularly prone to recurrences. He strongly recommends the use of pneumococcus serum in the treatment of Type I pneumonias and believes it does less good in Type II and practically no good in Types III and IV. He advises giving children 50 c.c. twice a day, beginning as early as the Type has been determined.

Volume III well maintains the high standard established by the first two volumes. E. E. G.

SURGICAL CLINICS OF NORTH AMERICA. Philadelphia Number. February, 1924. Vol. 4, No. 1. W. B. Saunders & Company, Philadelphia and London.

In this issue, the work being done in the Bronchoscopic Clinic under Dr. Chevalier Jackson is very well portrayed. Fourteen writers take part in this portion of the work, which includes the subjects of diagnosis, x-ray and treatment of foreign bodies in the bronchi, abscess and lung suppuration, and lesions of the esophagus.

Drs. John B. Deaver, Moses Behrend, E. L. Eliason, and D. Hinton contribute timely articles.

Dr. Schumann's case reports are instructive, especially in the management of subsequent pregnancies following cesarean section.

Dr. Edmund B. Piper, who has done original work on the use of mercurochrome in sepsis, contributes a very good article upon this subject.

Drs. Francis Grant, D. S. Ravdin, Leon Herman, John Speese, Thomas Klein, Temple Fay and J. Leslie Davis contribute special articles on the types of surgery in which they are especially interested.

The volume is well illustrated. L. D. E.

DIFFERENTIAL DIAGNOSIS. Volume II. By Richard C. Cabot, M.D. Third edition, revised. Octavo of 709 pages, 254 illustrations. Philadelphia and London: W. B. Saunders Co., 1924. Cloth, $9.00 net.

This well-known book gives in detail the histories and individual study of three hundred and seventeen cases. The work is divided into twenty-nine chapters, each chapter dealing with the differential diagnosis associated with some particular symptom, as vertigo, diarrhea, hematemesis, swelling of the face, frequent micturition and polyuria, delirium, palpitation and arrhythmia, etc.

The book is a most valuable one not only for the student and trained teacher but especially so for the average practitioner. Many patients consult the physician because of some special symptom and in the study and differential diagnosis of such cases as Cabot's book is often of great assistance.

One of the most interesting chapters is that devoted to abdominal and other tumors. Forty-one case histories, with the diagnosis in each quickly and accurately presented to the reader, make a series of abdominal cases that is well worthy of careful study.

Under diarrhea, Dr. Cabot gives the relative frequency of the common causes of diarrhea in adults from a study of six hundred and forty cases as follows: acute enteritis 286, chronic enteritis 158, cancer of bowel 52, pernicious anemia 34, mucous colitis 32, exophthalmic goiter 25, nervous diarrhea 17, tuberculosis of bowel 15, amebic dysentery 14, fat intolerance 7.

The author points out clearly the importance in prognosis of a study of the stools as regards blood, pus and excess of starch, fat or protein.

The discussion of intestinal ulceration of unknown cause is clear and impressive.

One cannot read any chapter without being impressed by the interesting and convincing manner in which each symptom is studied and presented. It makes one think of the clinic rather than the cut and dried fashion of the modern textbook, and few who read it will be disappointed. E. E. G.

INTRANASAL SURGERY. By Fred J. Pratt, M.D., F.A.C.S., Assistant Professor, Eye, Ear, Nose and Throat, Medical School, University of Minnesota, and John A. Pratt, M.D., F.A.C.S., Assistant Professor, Eye, Ear, Nose and Throat, Medical School, University of Minnesota. 354 pages. Philadelphia: F. A. Davis Company, 1924. Cloth, $5.00 net.

In this book the authors have endeavored to present the subject to advanced students in such a way that by the use of illustrations and not too much technical detail operative procedure on the nose and sinuses can be studied without too much confusion. Operations such as the septal resection are shown in succeeding steps that any tyro can intelligently follow. The language is clear and concise and the publisher has assisted the authors by presenting the work to the public in an attractive and legible form. The submucous operation covers fifty-one pages, contains many of the refinements that only experienced operators can describe and is profusely illustrated. The ethmoid operation is incompletely described, only that technique in which the middle turbinate is retained being dealt with, the more radical operation of Mosher not being shown. The chapter on location of sinus pain, vacuum pains and the ganglion neuroses is concise and practical. The work is a successful attempt on the part of the writers to place before students the technique which they have found practical and not the description of each and every operation by different authors or operators. It is to be considered from this standpoint and not as a voluminous work for reference and will be for this reason valuable for student use. G. F. G.

THE TREATMENT OF THE COMMON DISORDERS OF DIGESTION. A handbook for physicians and students. By John L. Kantor, Ph.D., M.D., Chief in Gastro-intestinal Diseases, Vanderbilt Clinic, Columbia University, New York City. Illustrated. St. Louis: The C. V. Mosby Company, 1924. Price $4.75.

This volume of 245 pages covers the ground of the commonly encountered digestive disorders excellently and affords a practical model adapted to modifications, imperative to individual demands, for the physician and student. One is impressed at every stage of the reading with the feeling that the author is telling his own story with a care bordering upon extreme caution.

The illustrations, 64 in number, many of which comprise roentgen studies of various gastric and intestinal disorders, are finely executed. There *does not* seem to be a single typographical error in the entire text, and the syntax and orthography are perfect—matters worthy of comment, since this is the first time that this reviewer has found such a degree of excellence.

The arrangement of the chapters and subdivisions aids materially in the digestion of the clear, facile and concise style of the author. The drug therapy and other forms of treatment are thoroughly rational and scientific, although the proprietary "lactopeptine" on page 184 appears an evidence of a nodding Homer. It can be safely predicted that this manual will run over into future editions, for it merits no less a reception at the hands of medical practitioners and students.

H. P. A.

NEUROLOGIC DIAGNOSIS. By Loyal E. Davis, M.D., Associate Professor of Surgery, Northwestern University Medical School; Fellow of the National Research Council. 12mo of 173 pages with 49 illustrations. W. B. Saunders Company, Philadelphia and London, 1923. Cloth, $2.00 net.

In this small volume an effort is made to correlate the basic principles of anatomy, physiology and pathology in the diagnosis of neurological conditions. In this book an attempt is made to present the subject of neurologic diagnosis from the viewpoint of correlating the symptoms with known anatomic and physiologic facts. A brief review of various important anatomic structures is followed by the presentation of very interesting and instructive case histories, numbering twenty-nine, pointing out in diagram the location of the lesion or lesions in every case. The discussion of every case is clear, full and complete and not only helpful to the senior medical student, but to every general practitioner who is at all times apt to be called to make a diagnosis of any one of the conditions enumerated. The little volume is a gem. G. E. H.

DIET FOR CHILDREN (AND ADULTS) AND THE CALORIE KIDS. By Lulu Hunt Peters, AB., M.D., Formerly Instructor on Infant Feeding, Los Angeles County and Clara Barton Hospitals, Los Angeles Medical Department, University of California, Los Angeles; Pediatrician, Los Angeles County Hospital; Attending Physician, Florence Crittendon Home, Los Angeles, California. New York: Dodd, Mead & Company, 1924. Price $2.00.

The nontechnical, entertaining style of this book makes it a volume that every physician can recommend to the mother not scientifically trained but who is really anxious to provide a wholesome diet for her children, be they sick or well.

To those who are familiar with Doctor Peters' other publications this book may seem like so much repetition. The fact remains, however, that in this work she presents in a systematized way the fundamentals of the feeding of children.

The table of calories, the diet lists, and the recipes for dishes recommended in the diet lists are so simply presented that it is impossible to misunderstand them. The availability of an acceptable Weight-Height-Age Table will be an incentive to a regular weighing and measuring program.

Each illustration, although only a few are used, has been well selected to demonstrate her point and will be especially striking to a person not familiar with laboratory work in nutrition.

Advice on discipline is scattered freely through the book and should accomplish wonders if her suggestions are adopted by the reader.

In addition to the attractive presentation of the subject matter proper, the marginal index is worthy of mention as it will be found very useful for quick reference. E. B. Bricker.

THE MEDICAL CLINICS OF NORTH AMERICA, July, 1924. New York Number, Vol. 8, No. 1. Philadelphia and London: W. B. Saunders Company.

This admirable number of the Clinics will appeal to many because of the large number and wide range of subjects discussed. The first contribution is by N. B. Foster and deals with functional disorders simulating organic disease. In sequence there follows consideration of chronic gall-bladder disease and chronic appendicitis by H. Brooks; of congenital fixation of the duodenum by hepato-duodenal membranes by W. L. Niles; of primary carcinoma of the liver by W. C. von Glahn and A. R. Lamb; of endocrinology and pediatrics by G. Draper; of cardiac pain by R. Levy; of diabetes mellitus by H. O. Mosenthal; of the common cold by R. L. Cecil; of syphilis simulating tuberculosis by G. G. Ornstein; of pyelitis by L. Buerger; of chronic hemolytic icterus complicated by myeloid leukemia by N. E. Brill; of the conservative treatment of hourglass stomach by B. B. Crohn; of the heart in chronic multiple arthritis by E. P. Boas and P. Rifkin; of the clinical value of vital capacity and exercise tests in the management of children with organic heart disease by M. G. Wilson; of diabetes in ambulatory patients by H. J. Wiener and H. E. Marks; of postpyloric ulcer by A. L. Holland; of the examination of cardiac patients by H. E. B. Pardee; of disturbance of heart action by W. E. Muns; of penetrating ulcers of the stomach by J. L. Kantor; of auricular flutter with 2 to 1 block in organic heart disease by J. Wyckoff; of obesity by B. F. Donaldson; of xanthoma diabeticorum by W. G. Lough and J. A. Killian; of pulse difference in aneurysm of the arch of the aorta by M. H. Kahn; of fits by F. Kennedy; of multiple sclerosis by E. D. Friedman; of spinal pachymeningitis with thrombotic softening by J. W. Stephenson; of bilateral pontine thrombosis by T. K. Davis; of constitutional inadequacy by G. H. Hyslop; of spinal cord tumor by L. D. Stevenson; of multiple neuritis with Korsakoff syndrome following hyperemesis of pregnancy by C. A. Cline, of neurologic symptoms caused by malignant tumors of the nasopharynx, and of the syndrome of the retroparotid space, by L. M. Saphiro. A. A. E.

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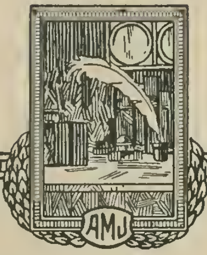

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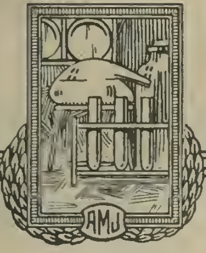

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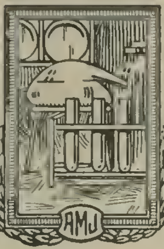

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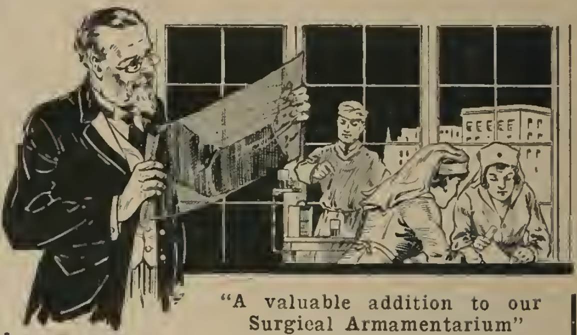

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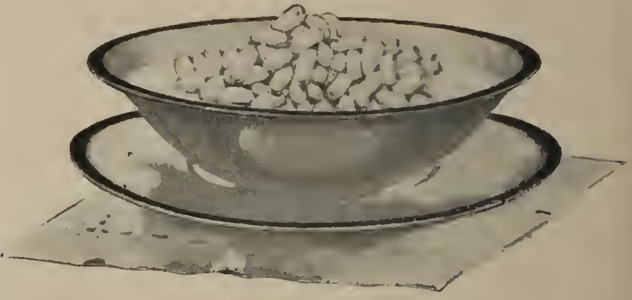

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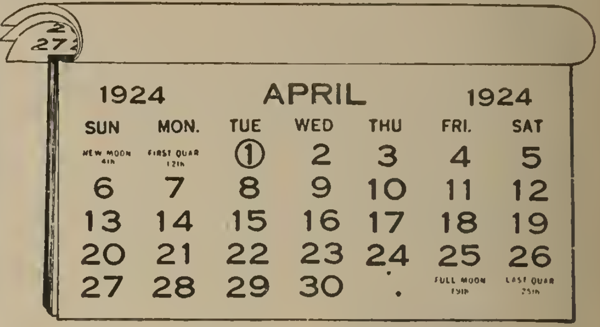

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